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ADDRESSES AND ORIGINAL ARTICLES

THE ELDERLY PRIMIPARA

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LL obstetricians agree that, after the age of 25 ur becomes increasingly difficult, both in primi e and in multiparæ Opinions differ, however about degree of the danger of pregnancy and labour auriceau, writing at the beginning of the eighteenth ury, stated that labours in elderly primiparæ ere longer and more severe and that the fœtal tality was greater than normal, he also noticed more of the mothers suffered from eclampsia, suggested that boys were more common than and that the babies' weights were greater Since time some authors, such as Lachapelle Spain, alze, and Quigley, have tried to prove that the is exaggerated, others, like Naegele, Simpson, er, Nixon, and Maxwell and Wong, show the osite It is difficult to compare them all because two are agreed about the age at which a primipara uld be classed as elderly, estimates varying from years upwards The present paper deals with niparæ over 40 years of age admitted to the ndon Hospital in the last decade, with an analysis the results, and suggestions for better treatment his type of case in the future

dditions to the maternity beds in the London spital during the past few years have enabled re of these women to be admitted, but the figures

had dead babies, and they were women who were, in all probability, undergoing their only pregnancy. Others more fortunate, obtained theirs at a price of long hours of anguish and perhaps lifelong disability. Only a minority had perfectly normal labours

Many years ago Meyer put forward the idea that elderly primiparæ could be divided into two classes, those that marry late and conceive early, and those that marry early and conceive late Most of the serious difficulties, he said, would occur in the latter, in whom conception was long delayed owing to some form of genital hypoplasia These few figures sugges that he was right

A letter was sent to each mother to inquire her present state of health Replies were rec from 27 All the women delivered by Cæs section were perfectly well, whereas of those went through labour 4 out of 20 had some dis such as prolapse, frequency and dysuria, abdominal pain and discomfort, backache and rhagia Only 3 of the women had had no ant care, and 2 of these had dead babies which otherwise have been saved No attempt was to follow the fate of the babies born alive to the possible damaging effects of the prolonged difficult labours

There is much room for improvement in the results shown in Table III, but Linden states that he does not believe the fœtal mortality can be reduced below 8 or 9 per cent if the mother is treated expectantl In Table V the results obtained in other institutions a compared The percentages for forceps, lacerations

TABLE I.—*Primiparæ over 40 Years of Age Delivered in the London Hospital*

of the pituitary, variations in the proportion of basophil cells present in the gland may occur. This question has been extensively studied by German workers,[3] who are in agreement that there is a definite increase in this type of cell in many cases of essential hypertension, and an even greater rise in the percentage of basophils in cases of malignant hypertension and secondary contracted kidney. Kraus[4] has made the interesting observation that in cases of Addison's disease in which the condition is due to adrenal tuberculosis there are few if any changes in the pituitary; on the other hand, in the relatively infrequent cases in which the Addisonian syndrome is found in association with an unexplained sclerosis of the adrenal cortex, the basophil elements of the pituitary show degeneration. It is possible therefore that in this type of Addison's disease we actually are dealing with a primary pituitary dysfunction with secondary adrenal insufficiency—that is, with a form of Simmonds's disease. The basophil cells are also diminished in certain other conditions such as endogenous obesity, and it is not claimed that an increase in this type of cell is only met with in hypertensive states.

Alterations of the blood-pressure level are also known to occur in certain other lesions of the pituitary. In chromophobe adenomata, especially in those cases presenting the syndrome of dystrophia adiposogenitalis, the blood pressure tends to be abnormally low; in acromegaly the incidence of hypertension seems to be high, since of acromegalic women over 40 years of age 60 per cent. were found by Brenning to be hypertensive.[5] Curiously enough in the male this association of acromegaly and a raised blood pressure was absent.

INFLUENCE OF THE PITUITARY LESIONS

There can, then, be little doubt that very definite alterations in the level of the arterial blood pressure are met with in conditions in which the primary lesion is believed to affect the anterior lobe of the pituitary body. The connexion between the pituitary lesion and the concomitant hypo- or hyper-tension is, however, uncertain. The anterior lobe of the pituitary contains no vasopressin, and there are therefore no grounds for assuming that derangement of its secretion would directly affect the blood pressure. Cushing emphasises the invasion of the pars nervosa by the basophil elements, the breakdown of their granular cytoplasm and its penetration into the tissues of the stalk and tuber; he suggests a "basophil activation" of the baso-hypophysis, the hypertension being the direct result of excessive secretion of vasopressin. Berblinger has also noted an invasion of the posterior lobe by basophils. There is, however, no evidence of a synergism between the anterior and posterior lobes of the pituitary, either in the sense of an activation of vasopressin, or of a stimulus to vasopressin secretion by anterior lobe elements.

Experimentally, a fall in blood pressure follows hypophysectomy, while the blood pressure is stated to be unaffected by damage to the tuber or the posterior lobe,[6] a finding which is against the assumed importance of vasopressin in the production of the alterations of blood pressure. On the other hand, anterior pituitary lesions are essentially pluriglandular, the changes in the other endocrine organs being in all probability secondary. The adrenal cortex, for instance, which is hypertrophied in cases of basophil adenoma, is known to be secondarily affected by pituitary lesions. Ablation of the anterior lobe of the pituitary leads to atrophy of the cortex,[6a] the medulla remaining unaffected, and the atrophied cortex regenerates if the animal is injected with anterior lobe extracts.[7]

The lesion being pluriglandular, it is unnecessary to attribute the clinical picture in its entirety to pituitary dysfunction.

The hirsuties is usually attributed to the adrenal cortical hyperplasia; the changes in the body-weight and possibly, in view of Houssaye's recent work, the alterations in the level of the blood-sugar may be regarded as direct results of the pituitary lesion. The cause of the changes in the blood pressure remains in question. Clinically the appearance of patients suffering from basophil adenomata of the pituitary is not suggestive of over-secretion of vasopressin, since vasopressin injected intravenously in man, even though it produces no definite rise in the arterial blood pressure, leads to a very noticeable blanching of the skin of the face, the hormone having a special affinity for the arterioles of this region. In cases of basophil adenoma, on the other hand, the face tends to be plethoric, and in an early case which I have at present under observation, this change in the complexion was one of the first symptoms to be noticed.

No satisfactory explanation has as yet been offered for the correlation between blood-sugar and blood pressure in both pituitary and adrenal lesions. In adrenal paragangliomata and in the basophil adenoma of the pituitary both blood pressure and blood-sugar content are above the normal level; in destructive lesions of the anterior lobe of the pituitary and in Addison's disease the reverse is the case.

Pituitary Pressor Substances in Cerebro-spinal Fluid and Blood

Both cerebro-spinal fluid and blood have been examined for evidence of excessive pituitary secretion in hypertensive states. There is general agreement that the oxytocic and melanophore-dilating principles of the posterior pituitary secretion can be detected in the cerebro-spinal fluid, though it is questionable whether the pressor hormone is present under normal conditions.

The oxytocic principle is found in greater concentration in the cisternal fluid than in the fluid obtained by lumbar puncture, from which it may be altogether absent, the inference being that it is absorbed into the general circulation during its passage down the theca. For this reason Hulse[8] examined the fluid obtained by cisternal puncture in man, injecting the fluid suboccipitally into cats and following the carotid blood pressure. (The suboccipital method of injection was used since it is said to produce a rise of blood pressure with amounts of pituitrin which are not recognisable if injected by the usual intravenous route.) With cerebro-spinal fluids from normal and nephritic individuals no rise in the animal's blood pressure followed the injection, in about half the cases of essential hypertension the fluid proved to be definitely pressor, but the corresponding sera were inactive. He concluded that the pressor principle passed from the cerebro-spinal fluid into the blood stream, and not in the reverse direction, and that it was in all probability vasopressin.

Hoyle,[9] on the other hand, using successive samples of fluid obtained by lumbar puncture, in order to ensure that the later samples came from the neighbourhood of the basal cisterns, found little evidence that any excess of vasopressin was present in the fluid of hypertensives. In only 3 of 26 cases of essential hypertension was any definite evidence obtained of the presence of a pressor principle in the cerebro-spinal fluid, and even in these the amount present was so *minute* that it seems unlikely that it was concerned in the rise in the general blood pressure.

The question of the presence of pituitrin in blood has recently been investigated in another connexion. The hypertrophy of the pituitary observed in pregnancy led Hofbauer[10] to suggest that the toxæmia of pregnancy might be the result of hypersecretion of this gland, coupled with adrenal over-activity.

This suggestion, as far as it concerns the pituitary, has recently been revived by Anselmino and Hoffmann[11] on the basis of experimental findings The symptoms of the eclamptic form of toxæmia show a similarity to those produced by the active principles of the posterior lobe of the pituitary, water retention with resultant œdema and the rise in the arterial pressure may be interpreted in terms of over-activity of the posterior lobe, that is, to over-production of vasopressin and the antidiuretic principle This attractive theory they have attempted to prove by a study of the physiological action of the blood plasma of eclamptic and pre-eclamptic patients

Since pituitrin is extraordinarily sensitive to alkalis, the plasma was first acidified and then ultra filtered through collodion impregnated filtering candles, the protein free filtrate thus obtained was tested on rabbits for pressor and antidiuretic substances They state that in patients showing a blood pressure above 180 mm Hg a pressor body can be demonstrated, while in patients with œdema an antidiuretic substance is found to be present The amount of antidiuretic substance present was often very high, amounting to as much as 6–8 Voegtlin units per litre of plasma, whereas in man 1 unit is sufficient to depress the excretion of water for some hours In normal pregnancy the plasma filtrate shows no antidiuretic action, and only a slight pressor effect The substance found in the blood of the toxæmic patients showed a resemblance to vasopressin in its sensitivity to alkalis and in other physical properties, but produced a definite rise in the blood pressure of rabbits when given subcutaneously, whereas vasopressin is known to be relatively inactive by this route as compared with the intravenous In the rare type of eclamptic toxæmia in which hypertension is present without œdema, the pressor body alone was present, the plasma filtrate showing no antidiuretic action

These findings have not received any direct corroboration Indirect evidence for a pituitary factor in the toxæmias of pregnancy is possibly to be found in the reported basophil increase in fatal cases of eclampsia,[12] and in the disturbances in the prolan and œstrin content of the urine of these patients,[13] but such findings suggest an anterior lobe intervention Pituitrin itself appears to be difficult to recover by the filtration method suggested, and it is possible that some other pressor body is actually in question

EFFECT OF VASOPRESSIN AND PITUITRIN ON BLOOD PRESSURE

Before any conclusions are drawn as to the possible rôle of vasopressin in the production of hypertension it is necessary to recognise that its pharmacological action is not necessarily pressor That it raises the blood pressure of the anæsthetised animal is not disputed, in the unanæsthetised dog, however, the effect of intravenous injection of vasopressin may be an actual fall in the blood pressure, measured in the femoral artery under local anæsthesia[14] Besides constriction of the peripheral arteries, the hormone produces coronary constriction, and the effect upon the blood pressure is the resultant of these two actions Under such conditions the weakening of the cardiac action may reduce the blood pressure almost to zero Quantitative differences in the response are found with different anæsthetics,[15] the result depending on the relative peripheral and coronary constriction, and the depressor effects being abolished by the simultaneous injection of adrenaline which dilates the coronary arteries The pharmacology of pituitrin offers another instance of the possibility of erroneous conclusions being drawn, if experimental results obtained in one species under an anæsthetic are applied to unanæsthetised animals of a different species

In normal individuals it was found by Moffat[16] that the intramuscular injection of pituitrin produced a very brief rise in blood pressure, which is succeeded by a fall in the systolic pressure, the diastolic pressure remaining practically unchanged, and the pulse pressure diminishing—an effect which may well result from coronary constriction, in hypertensive patients the fall was more marked than in the healthy A more elaborate investigation by Grollman and Geiling[17] gave similar results The injection was followed by insignificant changes of systolic and diastolic pressure, and by a temporary fall in the cardiac output, which they attribute to coronary vasoconstriction and inhibition of the oxidative processes in the myocardium Marked blanching of the skin occurred, but was apparently compensated by vasodilator changes elsewhere, since the changes in the blood pressure were negligible They point out that in the anæsthetised animal the normal pressure regulating mechanism may be to some extent out of action. Even, therefore, if vasopressin is ultimately proved to be present in excess in the blood or cerebro-spinal fluid of the essential hypertensive or the eclamptic, its exact effect upon the systemic pressure would be difficult to foretell

Guanidine as a Cause of Hypertension

Apart from adrenaline and the pressor hormone of the pituitary only one specific substance has been suggested as the possible active factor in the production of the hypertensive state, that substance is guanidine or one of its derivatives As far as I am aware the only workers who claim to have isolated and identified methyl guanidine in blood are Sharpe and Paton[18]

The question of the guanidine content of the blood of hypertensive patients has been exhaustively studied by Major,[19] who employs a colorimetric method (There is, of course, no absolute proof that the substance so estimated is actually guanidine, and since a correction has to be made for creatine, which also gives some colour with the reagent the estimation of the supposed guanidine which is present in normal blood in amounts of approximately 0 1 mg per 100 c cm, presents considerable technical difficulties) Major finds that all cases of nephritis with a raised blood pressure show a definite increase in the guanidine of the blood, which may exceed 2 mg. per 100 c cm —a concentration 20 times as great as that present in health, the majority of essential hypertensives also show a raised blood guanidine, though the maximum figure is considerably below the highest found in the nephritic patients

He suggests that the excess of guanidine found in the blood of essential hypertensives may be the result of a failure to excrete this substance even though the normal non protein nitrogen content of the blood suggests an adequate renal function When the excretory power of the kidneys was tested by giving methyl guanidine sulphate by mouth, it was found to be definitely impaired, as far as this substance was concerned when compared with normal controls; he also finds that in the hypertensive the excretion of the allied body creatinine when injected intravenously may be definitely defective even though the creatinine content of the blood is at a normal level He concludes that it is possible that in hypertension, retention of guanidine may occur as the result of a specific excretory failure on the part of the kidneys In dogs a prolonged rise of pressure was found to occur when the blood guanidine was raised by injection of methyl guanidine sulphate to a figure corresponding to that found in the blood of human hypertensives, and convulsions may occur when the guanidine in the animals' blood is no higher than 1 mg per 100 c cm

With Griffiths I[20] have determined the guanidine content in the blood in a series of normal individuals and of patients suffering from hypertension of various types The average value for the normals was 0·1 mg. per 100 c cm, and in nearly all cases less than 0 2 mg was present; in essential hypertension excess of guanidine was frequently present, the amount exceeding 0·3 mg. in 10 of 23 estimations. The blood guanidine content of the hypertensives could not, however, be correlated with the height of the blood pressure, and in individual cases considerable fluctuations may occur in the amount present without corresponding alterations in the blood pressure In four cases of eclamptic toxæmia the amount found was well within the normal range, and the convulsant action of guanidine cannot therefore be invoked to explain the convulsions of the disease. We were unable to find any correlation between the degree of nitrogenous retention and the amount of guanidine present in the blood in a small series of cases of nephritis and pyelonephritis, in such cases a high blood pressure and nitrogenous retention may be found in association with a normal blood guanidine content. Our conclusions agree with those of Rémond,[21] who found that the blood guanidine was frequently raised in hypertension, but that the rise showed no relationship to the degree of renal functional inadequacy, as determined by the Ambard coefficient.

Major's work is of interest, since in guanidine we have a product of the normal metabolism which is capable of producing a prolonged rise of blood pressure, but at best the case for guanidine as a factor in the production of the hypertensive state is far from strong Owing to the minute amount of guanidine present in the blood a colorimetric method must of necessity be employed, and it remains uncertain whether the body estimated is actually that substance. Further, as Felix[22] has pointed out, though many guanidine derivatives are pressor in action, others are actually depressor, while others again, such as arginine, produce no effect upon the blood pressure. In view of this difference in action it is impossible to be sure that the unknown product present in the blood is in fact pressor The assumption of a specific and early failure of guanidine and creatinine excretion by the kidney is surprising. It is generally believed that creatinine is the most efficiently eliminated of all the nitrogenous waste products and that in renal inadequacy it is the last of these bodies to show appreciable accumulation in the blood, in our experience, even when renal inadequacy has reached a stage at which considerable nitrogenous retention is present, the quantity of guanidine in the blood is not necessarily increased.

Unknown Pressor Bodies

From what has been said, it would appear that neither the two natural hormones, pituitrin and adrenaline, nor guanidine and its derivatives are likely to be the bodies concerned in the production of the raised blood pressure in the great majority of hypertensive patients If then a humoral factor is assumed to be the cause of the condition, the search has to be extended from the known pressor bodies to the unknown. Such an investigation is necessarily handicapped by the fact that we start in complete ignorance of the chemical and physical properties of the assumed pressor body The presence of such a substance can only be detected by the use of a physiological test object, such as the whole animal or an isolated limb; and there are no grounds on which we can determine beforehand what solvent or what reaction will be most suitable for the preparation of an active extract

It is impossible to review in detail the experimental work which has been produced on these lines, but the recent publications of Bohn[23] have exercised such an influence on German views of hypertension that they need some consideration. Using an alcoholic extract of citrated whole blood, he tested the effect of injections on the intact anæsthetised animal The dose of extract used was equivalent to 10 to 20 c cm. of the patient's blood. Provided that the assumed pressor body is soluble in alcohol, his method would appear to be an excellent one, since it avoids any marked change of reaction or other procedure which might lead to the appearance of artefacts capable of raising the blood pressure. With this technique he finds that the blood extracts of healthy individuals and of essential, or to use Volhard's nomenclature, "red" hypertensives, produce no rise in the animals' blood pressure; the blood extracts of "pale" or malignant hypertensives, on the contrary, produce a definite and sustained rise A similar effect follows the injection of the blood extracts of some cases of acute nephritis, of chronic nephritis with hypertension, and of eclamptics.

The immediate effect of the injection of blood extracts of normal persons and of red hypertensives is a fall in the animals' blood pressure, a fall which is not produced by the extracts of the blood of pale hypertensives and nephritics This fall he attributes to the presence of cholin, since it is absent in the atropinised animal and is intensified by acetylising the extracts His two hypertensive groups therefore differ from each other in two respects. the essential hypertensive bloods produce a depressor but no pressor effect, while the other types of hypertension show a pressor effect without any preliminary depression of the animals' blood pressure The net result from any blood represents the summation of the effects produced by the pressor and depressor bodies present. The action of the pressor body is peripheral

Volhard naturally finds in Bohn's work strong support for his differentiation between the red and pale type of hypertension In the former no active vasoconstrictor substance is present in the blood; with the transition to malignant or pale hypertension such a substance is believed to make its appearance; the two forms of hypertension are therefore of different origin. From the apparent absence of a pressor body in the blood, he concludes that the raised blood pressure of the red hypertensive—that is, of the essential hypertensive without renal change—is attributable to mechanical causes; premature loss of elasticity in the large arteries is assumed to lead to the full force of the heart impinging on the smaller vessels, which are consequently overstretched. The response to such overstretching is an increase in their tonus Decreased sensitivity of the large vaso-sensitive vessels such as the sinus caroticus due to the increased rigidity of their walls must also lead to a preponderance of the sympathetic (pressor) over the vagal (depressor) tonus, which again will increase the tonus of the arterioles. There can, however, be no question that extreme arterio-sclerosis of the larger vessels may be present without hypertension, and that the aortic rigidity of old age is associated with an increase of pulse pressure and a normal diastolic pressure, rather than with a true hypertension Though diminished elasticity of the large vessels is found in hypertensives, such a finding is no proof that this is the cause rather than the result of the raised blood pressure; the aortic changes seen in the hypertension of the paraganglioma, or of the animal, in which the blood pressure is raised as the result of sinus denervation, are certainly not primary. On a purely mechanical theory, it is also difficult to explain the lability of the pressure of the early stages of essential hypertension, or the tendency to peripheral spasm in these patients.

With the development of renal insufficiency the benign "red" hypertension passes over into the "pale" malignant type, pressor bodies are alleged to appear in the patient's blood, and an active generalised vasoconstriction develops. The origin of these pressor substances remains uncertain, but is believed to be connected with the kidney or its function; their presence in recognisable quantities in the blood is either due to defective excretion by the damaged kidney or to the formation of such bodies in the degenerating ischæmic kidney itself.

In favour of the latter hypothesis Volhard cites the experiments of his collaborator, Hartwich,[24] who found that in animals a reduction of the renal tissue by 50 per cent by unilateral nephrectomy does not lead to a rise of the blood pressure, while ligature of one renal artery, the kidney being left in situ, produces hypertension. Hartwich has also studied the effects of the press juice of various organs upon the blood pressure. The press juice of all the organs examined was found to have a depressor action, but that of the kidney when allowed to autolyse in vitro developed a strongly pressor substance, as did the press juice of the spleen and the placenta. This pressor body was not obtained from the autolysed extracts of other organs. Other workers, however, who claim to have produced a rise in the blood pressure of animals by a reduction of the renal substance, find that the presence of necrosing renal tissue is not a necessary factor in the production of hypertension, and in bilateral cortical necrosis of the kidney in man the blood pressure is not raised.[25]

It is generally agreed that red hypertension may pass over into pale hypertension with renal involvement, and that no sharp line of demarcation can be drawn between the two stages of the disease. In the transition stage pressor bodies are found by Bohn to make their appearance in the blood, but from the clinical standpoint there is nothing to suggest that a new pressor mechanism, involving especially the peripheral circulation, comes into play at this period.

Volhard, it is true, assumes that the pallor of the pale hypertensive is evidence of a generalised arterial spasm of the peripheral vessels, such as might be produced by Bohn's pressor body, but this assumption and his clinical division of hypertensives into red and pale types are by no means generally accepted. It is equally probable that the pallor is the expression of the secondary anæmia, which develops in the terminal stages of essential hypertension, but of which no explanation has as yet been given. It is interesting to recall that Bright himself had noticed that in chronic glomerulo nephritis "after a time the healthy colour of the countenance fades," and that he recognised the serious prognostic significance of this symptom. Anæmia is characteristic of all renal conditions in which nitrogenous retention occurs,[26] and accounts adequately for the change in the appearance of the essential hypertensive at the stage of the disease at which the kidney function begins to fail.

Volhard's suggestion that in the early stages of hypertension the causal factor is largely mechanical, that is a loss of elasticity of the vascular system, and that only in the later stages does active primary spasm of the smaller vessels supervene, is in flat contradiction to the usually accepted views of the course of essential hypertension, for it is generally held that in the early stages an active peripheral spasm of the smaller vessels is present, evidenced by the lability of the blood pressure, and by a "work" hypertrophy of the medial muscle of the arterioles; only in the later stages of the disease, with development of secondary degenerative changes in the vessel, does the mechanical factor come into play and tend to maintain the blood pressure at a less variable level.

In acute nephritis the pressor body, as described by Bohn, only makes its appearance in the blood after several days, and cannot therefore be held responsible for the initial rise of blood pressure. Volhard therefore suggests that there is in this disease an initial stage of "prenephritis" without symptoms and without urinary changes, during which pressor bodies are formed in the damaged kidney, and that with their liberation general vascular spasm and secondary renal ischæmia ensue; but for such an hypothesis there is at present no evidence.

REPETITION OF BOHN'S EXPERIMENTS

A priori, Bohn's results are somewhat unexpected. We have been accustomed to regard essential hypertension as a slowly evolving disease, without any sharp line of demarcation between its various stages and presumably the result of the same continuously active cause throughout. It is surprising to learn that a humoral factor is concerned in the elevation of blood pressure during the later stages, while the hypertension of the earlier period must be explained on entirely different lines. With Griffiths, I[27] have attempted to repeat his experiments, adhering to his technique, but using a considerably larger dose of the alcoholic blood extract.

An injection of the equivalent of 10 to 20 c cm of the patient's blood, as used by Bohn, seems to be too small a dose, if an unequivocal effect is to be produced upon the animal's blood pressure, especially since the injection of even small amounts of fluid into the circulation is liable to lead to slight disturbances of the blood pressure. With an injection equivalent to 10 c cm of the patient's blood, for instance, the ultimate of concentration of the assumed pressor body in the cat would be only one twentieth of that present in the blood of the patient.

The most striking effect of the injection of alcoholic extracts of whole blood is a rapid but transitory fall in blood pressure, accompanied by bradycardia. In agreement with Bohn, we find that the extent of the fall is considerably diminished by atropine; but it is almost invariably present with whole blood extracts irrespective of the type of patient studied, healthy or hypertensive, while with plasma extracts and ultra filtrates the depression of the blood pressure is slight or absent.

It would seem probable therefore that the depressor body, whatever it be, is derived from the corpuscles. The only whole blood extracts, in the various types of hypertension examined, which suggested the possible presence of a pressor body were those of some of the essential hypertensive patients, but even in these cases the corresponding plasma extracts were inactive. If active pressor bodies are actually present in these bloods it is reasonable to suppose that they are to be found in the plasma and are not confined to the corpuscles. It may be noted that pituitrin added to blood is largely recoverable in these alcoholic extracts, so that the experiments give no support for the theory that vasopressin is concerned in the production of essential hypertension.

We have been left with the impression that Bohn's work needs further confirmation before it can be accepted as an explanation of certain hypertensive states, and as a basis for a revision of existing views of essential hypertension.

Possible Deficiency of Depressor Bodies

Bohn apparently regards the effect produced by his extracts upon the blood pressure as representing the summation of the action of pressor and depressor bodies, the assumption on the humoral theory being that the general arterial tonus is at any moment the resultant of the action of constrictor and dilator substances. Conceivably therefore a permanent increase in the level of the blood pressure might be due to the absence of an adequate content of a depressor body which should normally be present in the circulation.

Numerous such depressor bodies have been isolated from the tissues; they are for the most part generally distributed throughout the body, though their concentration in the various organs may be very different This general distribution is in striking contrast to that of the pressor hormones which are produced locally though their action is general. It may be deduced that the substances capable of producing vasodilatation exercise a limited action on the surrounding tissue, and that they are concerned with the local tissue need for blood, rather than with the general vascular tone. Histamine is, for instance, liberated in injured tissues, and adenosin may be responsible for the hyperæmia of active muscle As Dale suggests, such bodies are in normal life concerned with the fine adjustment of the blood flow, rather than with the general arterial tone. A general depression of vascular tone is unnecessary and even dangerous, unless accompanied by an increased action of the heart Since, however, certain of these depressor substances have been detected in the blood and urine, the possibility of their exercising a regulating action upon the general blood pressure cannot be altogether excluded.

The substances of this type which are now recognised are histamine, acetylcholine, adenosine, Kallikrein, and a possible fifth substance described by Lange. Of these the body which has perhaps the strongest claim to be considered as a circulatory hormone is kallikrein, isolated originally from urine by Frey [28] Injected intravenously it has a general dilator effect upon the arteries, including the coronaries, and at the same time increases the amplitude of the heart-beat.

Though kallikrein under various trade names has been used extensively in the therapeusis of such conditions as essential hypertension, angina, and arterio-sclerotic gangrene, there is no agreement as to its value Any results obtained may be due merely to its known vasodilator activity, and are in no sense proof that a specific substance lacking in the body has been successfully replaced, for deficiency of active kallikrein in the blood of the hypertensive there is as yet no evidence Lange [24] has also obtained a depressor body from blood and urine, which in certain of its properties is distinct from kallikrein, his extracts are powerfully depressor, after any adenosine and histamine present have been destroyed, in the atropinised animal insensitive to acetylcholine. He finds that this substance is present in the blood of cases of essential hypertension in abnormally small quantities, while the urine of such patients contains excessive amounts; the reverse is true of cases of chronic glomerulo-nephritis with raised blood pressure Lange's depressor body is stated to be very widely distributed throughout the body, being found in greatest concentration in organs with especially rich blood-supply.

Adenosine and its derivatives also appear to be widely distributed in the body and like kallikrein and Lange's depressor substance, it has been found in the urine; it exercises a similar depressor action upon the tonus of the small arteries and capillaries [30, 31] Though this body is believed to be essentially connected with local circulatory changes such as the work hyperæmia of muscle, or inflammatory hyperæmia, it has been suggested that under certain circumstances it may pass from its local site of production into the circulation and produce general circulatory collapse.

The time is obviously not ripe for any attempt to assess the physiological significance of these bodies in the maintenance of the general vascular tone, Kallikrein and Lange's depressor substance have not as yet been identified chemically, and there is always the possibility that such ill-defined bodies, recognisable only by their pharmacological effects, are in reality artefacts. The fact that certain of the depressor bodies have been found to be present in the urine may perhaps be regarded as suggestive of a general, in addition to a purely local, action; but for the present the suggestion that a permanent rise in the blood pressure may result from lack of depressor bodies in the blood stream is merely an hypothesis

Sinus Hypertension

Though it is probable that experimental damage to the renal tissue in animals leads to hypertension, there is only one experimental method by which a permanent elevation of the blood pressure can certainly be produced—the destruction of the aortic and sinus nerves These so-called buffer nerves exercise a tonic inhibitory action on the circulatory centres of the medulla; their removal is followed by definite and persistent hypertension.

The operation performed in two stages is attended by a considerable mortality, but, if not immediately fatal, is compatible with a prolonged period of survival. According to Heymans the blood pressure of the dog rises immediately after operation to a level of 300 mm Hg, stabilising later at a rather lower figure, but responding to the slightest stimuli by a further rise In the rabbit a pressure of about 160 mm. Hg follows bilateral resection, while unilateral operation produces a slight but appreciable rise in the level of the blood pressure. As might be expected, the destruction of the buffer nerves, besides elevating the blood pressure, leads to a high grade of tachycardia, the pulse-rate in the dog stabilising at a figure of about 150, and in the rabbit at 250 to 300 [32, 33]

The pathological changes found in denervated animals to some extent resemble those seen in essential hypertension in the human being.

The left ventricle is hypertrophied, and its wall shows a patchy fibrosis, medial degeneration of the aorta is present, with intimal calcification, the afferent arterioles of the renal glomeruli show hyperplastic and degenerative changes, while the kidney itself shows interstitial fibrosis and scarring Adrenal hypertrophy, limited to the cortex, has been described [34, 35] The renal changes are here undoubtedly secondary to the elevation of the blood pressure, and their occurrence has an obvious bearing on the nature of the renal lesion present in essential hypertension Hering [36] points out that the arterial change, which is most developed in the media, resembles both in its nature and in its distribution in the vascular system that produced by injections of adrenaline He recalls that Cannon and Rapport had shown that stimulation of the aortic nerves exercised an inhibitory influence on the secretion of adrenaline, and suggests that even if no continuous hypersecretion of this body is present in the denervated animal, uncontrolled adrenaline response to the normal stimuli may produce the vascular change, just as vascular lesions are produced by the discontinuous doses of adrenaline given for experimental purposes

Has this type of experimentally produced hypertension in animals any bearing upon the hypertensive states of man, and is there any reason to suppose that human hypertension arises from interference with the sinus reflex? Evidence for such interference might be found in the absence of a sinus bradycardia in spite of the presence of hypertension, in morphological changes in the sinus, and in abnormal sinus reflexes.

In hypertension of rapid onset, such as is seen in eclampsia and acute glomerulo-nephritis, well-marked bradycardia is the rule, the pulse-rate often falling to below 60 and quickening as the blood pressure falls to a normal figure In such conditions the sinus mechanism is obviously intact In essential hypertension bradycardia is exceptional

Mannaberg,[37] who examined a large series of hypertensives on the assumption that the thyroid was concerned in the production of the condition, found that a definitely slow pulse was present in only 3 per cent of his patients, in 55 per cent the pulse-rate was normal, and in 42 per cent increased Even in those patients showing an increase, the rise of pulse rate was usually moderate, 35 per cent having a pulse rate below 90

Mies[38] has recently examined 97 cases of hypertension without a cardiac decompensation from this point of view, of these 17 showed no evidence of renal damage to the functional tests He finds that in essential hypertension with intact kidneys the pulse frequency is without exception high varying from 96 to 112 with an average rate of 100, on the other hand, patients in whom evidence of renal damage was present showed, with one exception a normal rate of pulse He suggests that in essential hypertension without renal damage the rise in blood pressure is the result of disturbance of the sino-aortic reflex.

My own experience of essential hypertension is that definite bradycardia is exceptional, but I have not been able to recognise any such distinction between the pulse rates of patients with and without damage to the kidney, as is drawn by Mies Even where tachycardia is present in hypertensive patients in the absence of cardiac decompensation, it is of a very different order to that met with in animals in which the sinus has been denervated In the rabbit the pulse rate rises from an average of 140 to 360 per minute as the result of the operation, though the maximal rise in blood pressure is about 50 to 80 mm Hg The rise of pulse rate is in proportion much greater than that in the pressure, certainly no such relationship can be claimed to be present in the essential hypertensive Unless therefore a dissociation occurs between the cardiac and vasomotor reflexes of the sinus, it is difficult to explain the findings in human hypertension on these lines Though the slow pulse rate typical of the sinus response is absent, the sinus mechanism is adapted to deal with rapid alterations of pressure rather than with such sustained high pressure as is present in essential hypertension

The assumption that atheromatous changes in the vaso-sensitive zone leads to such loss of sensitivity as to put out of action the inhibitory tonus of the buffer nerves is not borne out by post mortem findings The nerve-endings in atheroma of the sinus are found to be normal on histological examination though it is arguable that atheroma leads to such loss of elasticity of the arterial wall as to prevent the stretching and consequent stimulation of the healthy nerves which normally results from an increase in the internal pressure There is, however, no correspondence between the degree of atheromatous change present and the height of the blood pressure among 18 cases of marked involvement of the sinus recently examined by Keele[39] in only two cases had hypertension been present, and Hasselbach[40] in a much larger series found no relationship between structural changes in the sinus and the level of the blood pressure The pathological evidence does not therefore suggest that essential hypertension is the result of a diminished elasticity of the carotid wall

In man attempts have been made to estimate the sensitivity of the sinus by direct pressure and also indirectly by lowering the pressure in its lumen by compression of the carotid artery

Direct compression over the sinus leads to a slowing of the heart and a fall of blood pressure which were at one time believed to be due to mechanical stimulation of the vagus, but which are now attributed to the sinus reflex, bilateral compression of the common carotids will naturally produce a fall of blood pressure in the vaso-sensitive zones, and is followed by a rise in heart rate and in the systemic blood pressure It is hardly necessary to point out that the sinus compression test, though the subject of very numerous publications, is of a highly artificial nature Apart from anatomical variations which may invalidate the conclusions drawn as to the sensitivity of the sinus reflex the stimulus applied bears little resemblance to the natural one, pressure from without takes the place of the normal stretching due to a rise of pressure within the lumen of the vessel The fall of pressure due to bilateral compression of the carotids simulates more exactly the normal method of excitation, but here again the pain and discomfort experienced by the patient may well lead to changes of blood pressure and cardiac rate

In the hypertensive subject the reaction of the sinus to the compression test is excessive, both in regard to its effect upon the heart rate and upon the arterial pressure, it is, however argued that the sclerosis of the sinus in these cases facilitates the compression of the nerve-endings of the sinus wall between the finger and the calcified intima, and thus leads to an exaggerated response to the artificial stimulus though the natural stimulus of a raised pressure within the sinus fails to excite the same intact nerve-endings owing to the loss of normal elasticity of the wall In some cases of essential hypertension the response is so marked that the blood pressure temporarily falls to a normal level

A more satisfactory method of exciting the sinus reflex is by means of the normal physiological stimulus —a rise of pressure within the artery During the course of the response to an intravenous injection of adrenaline, one often observes that after the initial rise in the pulse rate and the systolic pressure, a transient fall in the rate of the pulse occurs to a figure below that present before the injection Presumably this drop in the pulse rate to a level which, for the individual patient, represents a bradycardia, is the result of the sinus response Comparing a small series of essential hypertensives with patients in whom the blood pressure was at a normal level I was unable to detect any difference in the frequency of occurrence or in the degree of this sinus bradycardia in the two groups The sinus mechanism would therefore appear to be sensitive in the essential hypertensive and still capable of responding to a sudden stimulus To the occlusion of both carotids the sinus of the hypertensive is said to be insensitive Though sclerosis may occur in the aorta and the carotid sinus at a time when the remainder of the vascular system is intact, and might therefore be conceived to lead to hypertension and ultimate generalised arterial degeneration, by interfering with the working of the sinus reflex, the symptoms of essential hypertension in man do not suggest that a breakdown in this mechanism is the cause of this condition

The Unitary View

If one may attempt to summarise the present position of hypertension, at least three pathological conditions are now recognised in addition to advanced renal inadequacy, with which a raised blood pressure is associated and to which it appears to be secondary, these conditions are the adrenal paraganglioma, certain pluriglandular states possibly essentially pituitary and the denervated carotid sinus Whether this advance in our knowledge sheds any light upon the origin of the so-called essential hypertension, the form of hypertension which to us as physicians, is of most practical interest is doubtful

We are confronted with two possibilities Either essential hypertension is a definite entity due to a single cause, or since, like fever a raised blood pressure is merely a symptom, the group of patients diagnosed as suffering from this disease is, in reality, heterogeneous. Attempts, however, to subdivide the group of essential hypertensives along lines suggested by our present knowledge of other conditions in which hypertension occurs carry little conviction. Apart from a tendency to excessive weight among these patients there is little to suggest a pituitary origin; the varied symptomatology of pituitary lesions is not observed among essential hypertensives, nor is there any gradation of the clinical picture from the essential hypertensive to the subject of pituitary basophilism. Similarly, though labile, the blood pressure of the essential hypertensive does not show the extreme instability associated with the chromaffin tumour, nor is such tachycardia as may be present comparable to that observed after sinus denervation. On the other hand, the argument for the homogeneity of the condition based on the characteristic post-mortem findings has lost much of its force; the cardiovascular and renal changes of essential hypertension are in no sense specific, since they are found in the various endocrine lesions with which hypertension is associated, and even in animals in which the carotid sinus has been denervated; they seem therefore to be merely secondary results of a sustained rise of blood pressure.

In default of a definite ætiology and of specific post-mortem appearances we are reduced to clinical observation, and, judging by this standard, we must, I think, take a unitary view of essential hypertension. From its symptoms, course, age-incidence, and the prominence of the hereditary element it constitutes as well defined an entity as many other diseases of which the cause is equally obscure. If we accept this view of the condition we must admit that as yet no cause for the rise in the arterial pressure has been suggested, which satisfies the requirements of the case, nor do we as yet know whether such a cause will ultimately be found in the endocrine system, in some derangement of metabolism or excretion, or in the central nervous system itself.

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THE USE OF THE DIATHERMY KNIFE

IN MALIGNANT DISEASE OF THE MOUTH, NOSE, AND PHARYNX

WITH AN ANALYSIS OF 109 CASES

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(Concluded from p 636)

The Tongue and Floor of the Mouth

Malignant tumours of the tongue, apart from carcinoma, are exceedingly rare. The series that I am publishing here includes one endothelioma and two glandular carcinomata; the remainder of those examined microscopically were all squamous-celled carcinomata

In the treatment of cancer of the tongue, Benjamin Bell in 1786 introduced the écraseur, which was still used by Morant Baker in 1884. Harmer, Gordon-Taylor, Gwynne Williams, Wyeth, Clark, Capizzano, and others have employed diathermy, but statistics of results have not been published. Diathermy excision certainly seemed to be an improvement on former methods, and brought into the realm of practical surgery those cases where the floor of the mouth was involved. For tumours situated in the anterior regions of the mouth the outlook is much better than where the disease attacks the posterior part of the tongue In the latter region access is difficult, the tumour is generally highly malignant, and the glandular fields are likely to be extensively sown with secondary deposits. It is therefore questionable whether surgery should be employed save perhaps in an exceptional case, one of the exceptions being a carcinoma of the tonsil which has grown downwards and invaded the tongue. Most tumours in this region should be treated by irradiation.

I have found post-operative hæmorrhage more liable to occur when diathermy is used in the anterior part of the buccal cavity than when it is employed elsewhere This, I think, may be explained by liability to the tearing of vessels owing to movements of the muscles of the tongue and floor of the mouth. When a dissection of the neck on one or both sides precedes the mouth operation, an opportunity should be taken of ligaturing one or both external carotids. Most of the cases recorded were somewhat advanced, many of them having been referred to me by surgical colleagues as "inoperable." This should be borne in mind when considering the results which follow:

Thirty-one consecutive cases of malignant disease of the tongue are recorded, all were treated over five years ago. Of these patients, 8 lived for more than five years = 26 per cent Three of these patients have since died, but only one from carcinoma (Of the 28 microscopically confirmed, 7 lived more than five years = 25 per cent)

In 15 the glands were carcinomatous (13 microscopically confirmed), and none of these survived five years.

In 16 the glands were not carcinomatous, of these 8 survived five years=50 per cent (7 out of 15 microscopically confirmed=47 per cent)

In addition, 3 patients died after removal of secondary carcinomatous glands before the intended diathermy One of these died from hæmorrhage from a chronic gastric ulcer, one from secondary hæmorrhage from the neck, and one from post-operative heart failure

The Lower Alveolus

Three cases of carcinoma of the lower alveoli are also recorded All were treated over five years ago, one survived for over five years and died without a recurrence=33 per cent

The Cheek

Fells, of Travancore (1908), operated on numerous Indians suffering from carcinoma of the cheek said to be produced by chewing quids of tobacco In spite of the fact that after operation the patients resumed the habit, a few successes were obtained by surgical excision Simmons (1930) reports 2 out of 7 cases alive five years after surgical excision (=29 per cent), but Brewer (1923) surveying the surgery of Roosevelt Hospital and of the following surgeons Warren of Massachusetts, Boys, Unwin, Morestein, Davis, and Dollinger, found only 3 out of 117 cases which had lived for three years By radium, Brewer obtained 35 per cent of three year successes, and Berven, of Stockholm, reports 73 cases, 21 per cent of which were alive after five years

I have had an opportunity of treating only a very small number of such cases, but I think the technique which I devised in 1926 (Patterson, 1927), if carried out in suitable cases, is likely to give good results Four cases were operated on by this method before five years ago and all are still living without recurrence after periods of 7 yrs 10 mos, 7 yrs 9 mos, 7 yrs 5 mos, and 5 yrs 6 mos Two cases treated prior to 1926, by local application of diathermy, died within two years, but without local recurrence

It is only in those cases where the disease has not penetrated deeply that good results are to be expected from diathermy When the tumour has spread outwards into the muscle fibres, and more especially if the subcutaneous tissue or skin has become involved, a cure can seldom be obtained by surgery, better results may be expected from the use of irradiation In the employment of diathermy for carcinoma of the cheek the main difficulty is to secure destruction of the tumour and at the same time preserve the skin of the face If diathermy is used from the inside the vitality of the skin is jeopardised at one or more points, and either an incomplete operation is carried out or the patient is left with a troublesome skin fistula Since 1926 I have adopted the following technique

An incision is made commencing at the level of the lobule of the ear and following the line of the posterior margin of the descending ramus of the mandible as far as its angle, then proceeding forwards in line with the lower border of this bone nearly as far as the symphysis The incision is carried through the skin only The question of depth is important, as the parotid gland is liable to injury This accident occurred in one of my cases and a parotid fistula which took some time to heal resulted

A large flap of skin is dissected up, this includes the skin covering the cheek The facial artery and vein are ligatured and divided as they cross the lower border of the ramus The distal portion of these vessels is dissected upwards, and they are again ligatured and divided near the ala of the nose at a point 1½ to 2 inches above the previous ligature The excision of this segment of the facial vessels is carried out with a view to preventing subsequent hæmorrhage A quantity of ribbon gauze is now packed underneath the skin flap so as to separate it from the underlying soft tissues The mouth is then widely opened with a gag inserted on the side opposite to the growth. The interior of the mouth is illuminated by a head lamp and the affected area is excised with the endothermy knife by cutting clean through the soft tissues of the cheek at a safe distance from the margin of the tumour It is most important to keep the instrument at right angles to the mucous membrane surface In this manœuvre the skin cannot be damaged, as it is completely protected by the gauze packing

The surgeon now removes the packing, and on elevating the skin flap a large opening is found to exist through which an excellent view is obtained of the side of the tongue and alveoli In cases where the growth has spread to the upper or lower alveolus an opportunity may be taken through the temporary opening to apply the diathermy button to any suspected area To complete the operation all that is necessary is to replace the flap of skin and stitch it accurately in position I have so far had no trouble from sloughing of the skin as the blood-supply, notwithstanding the position of the incision, is ample Although Stenson's duct must be destroyed where it lies in the cheek, no infection of the parotid gland and no subsequent stricture of its duct has developed

There is one important consideration in the after treatment, and that is to prevent restricted opening of the mouth from the formation of scar tissue After the operation the mouth must therefore be propped open from time to time, and if necessary stretched under an anæsthetic In this way subsequent limitation of movement can be prevented In my first case after treatment was omitted, and the patient for six years has only been able to open the mouth to a very limited extent, but he manages his food tolerably well In the other cases precautions have been taken and movements are free It is remarkable that the substitute cheek formed from the skin only becomes covered with healthy mucous membrane in a comparatively short time and looks and feels not at all unlike the cheek on the healthy side

The Hard Palate, Upper Alveolus, Nose, and Nasal Sinuses

SOME REMARKS ON PRELIMINARY EXAMINATION

Needless to say, searching investigation is necessary in every case before embarking on any operative treatment There is little doubt that a tumour may exist in the nose or nasal sinuses and grow to a considerable size before giving rise to any symptoms The symptoms and signs, when they do appear, are frequently indistinguishable from those of a chronic infection, and the true nature of the case may remain for long unsuspected, revealing itself perhaps by accident at operation, or when the disease is too far advanced for successful treatment Here I shall refer to a few illustrative cases

Some years ago a man was sent to me complaining of severe pain over the left eye On transillumination the left antrum was dark There was some sponginess of the gums around the second left upper premolar I advised exploratory puncture of the antrum, but the patient did not wish this carried out, and when he was seen by me nine months later there was a suspicious looking granulation in the region of the premolar just referred to A fragment was removed and examined microscopically showing the case to be one of carcinoma An operation was performed and growth was found filling the antrum and sprouting through its anterior wall into the cheek

In another case a patient presenting unilateral nasal obstruction and discharge of nine years' standing, with a large collection of cheesy material in the front part of the nose, was found at operation to have a malignant growth involving the antrum and ethmoid

About a year ago a male patient came to hospital complaining of pain in the region of the left ala nasi and adjoining cheek Over this area there was diminished sensation The nose was carefully examined with a negative result, and on transillumination the antra were equally bright Radiography of the sinuses revealed nothing abnormal I did not see the patient for six weeks, and then he presented himself with a firm swelling over the left antrum When investigated he was found to have a large carcinoma filling the left antrum, invading its anterior and outer walls and the soft tissues covering them By this time the condition was inoperable, and radium treatment with a palliative result was employed.

Recently I saw a patient who had complete loss of sensation over the cutaneous area of distribution of the second division of the trigeminal nerve on one side Apart from this there were no symptoms On transillumination the antrum on the corresponding side was dark My suspicions were aroused. The case proved on exploration to be a carcinoma of the antrum extending upwards and invading the floor of the orbit.

In cases where a malignant tumour of the nose or nasal sinuses is suspected, examination for anæsthesia of all skin areas and all accessible mucous membrane areas supplied by the Vth nerve should be carried out. Diminution of loss of sensation in any of these areas must be regarded as an unfavourable sign. By extension upwards or backwards other cranial nerves may become involved Malignant disease of the antrum may be found by accident when operating on a case which has been diagnosed as one of chronic empyema, and this is one reason, should there be the slightest suspicion of a growth, for adopting an open operation such as that known as the Caldwell-Luc. Examination of the nasopharynx should never be neglected in any growth involving the regions under consideration. If the growth has spread backwards into the upper pharynx operative treatment is contra-indicated. A growth originating in the nasopharynx may give rise to misleading signs and symptoms due to involvement of the cranial nerves may appear early.

Until recently carcinoma of the antrum has proved very resistant to treatment

Liston in 1846 stated that the disease was always fatal, whether treated by excision or the cautery Phillips (1898) reviewed 17 cases, of which one lived for 14 months Although Gaudier (1907) could not cite a single case which was cured, Kilgore and Chamberlain reported a patient who lived from 1904 to 1924, with repeated treatments during this period for recurrences StClair Thomson reported in 1922 on two patients he had successfully treated by Moure's operation who were alive and well 12 and 10 years after operation Clarke and Mollison (1926) reported a case of basal-celled carcinoma which was well 13 years after excision Bloodgood (1922), after 30 years' experience with surgery, without a single success, reported a patient alive five years after treatment with the cautery. Johnson (1924) assessed the operative mortality at between 15 and 39 per cent , advocated treatment with radium after surgical exposure, and reported on 2 patients alive after five years Quick (1926) advised the use of X rays as well as radium He recorded two successes of over five years, and 7 more of over three years, out of a total of 100 cases. Cumberbatch and Harmer and Clark, of Philadelphia, have recorded successes from diathermy treatment.

It is well known that a tumour starting in the alveolus or hard palate may invade the antrum or floor of the nose The process, however, may be reversed. The cases I record here have been treated by a combination of ordinary surgical methods and diathermy. There has been no operative death.

Of 7 cases of carcinoma of the hard palate or maxillary antrum, all treated over five years ago, 2 lived over five years (=29 per cent) (One patient died of pneumonia about 4½ years after diathermy)

I also record again an example of melanotic carcinoma of the hard palate (reported in 1926). This patient died from a distant metastasis 3 yrs 4 mos after operation

Under the heading of "Miscellaneous" I record 10 further cases, including malignant tumours of the nose, post-nasal space, and posterior pharyngeal wall Five of these patients lived for over five years (50 per cent). Of these 3 are still alive after 12 yrs 10 mos , 7 yrs 9 mos , and 6 yrs 7 mos , 1 died without recurrence after eight years, and 1 with a recurrence 6 yrs 2 mos, after operation.

Carcinoma in these regions appears to best treated by excision aided by diathermy Treatment with radium or X rays may follow The disease, so long as it remains operable, should be treated surgically. Radiological treatment alone appears to be rarely successful. The methods employed may be briefly considered

In all growths originating in the region of the nose the superior maxilla is likely eventually to become invaded, although the tumour may have its origin in the mucous membrane related to the vomer, the palate, sphenoid, ethmoid, turbinate, lacrymal, nasal or even frontal bones Broadly speaking the method of attack depends largely on whether the buccal or nasal cavity is chiefly involved If the growth is limited to the hard palate or alveolus it can with comparative ease be dealt with by way of the mouth It is probably safer, even if there is no evidence that the periosteum or bone is involved, to remove the bone underlying the tumour, which means that the lower part of the nose and probably also of the antrum will be opened into the mouth An operation of this character will entail division of the soft tissues at a safe distance from the tumour with the endothermy knife The bone must be divided with saw and chisel In cases of this nature the outer and anterior wall of the antrum as it joins the alveolus may require division, and the vomer in a centrally situated tumour, or in one which crosses the middle line, may have to be divided horizontally

All these procedures can be carried out through the mouth and nose and no external incision is necessary. But when the tumour has extended upwards invading the nose, or where it is thought that the antral floor has become involved, it is much better to split the upper lip in the middle line and if necessary carry the incision around the junction of the nasal ala with the lip, sometimes extending it upwards Depending on the situation and extent of the tumour the paranasal incision may be made on one or both sides I consider this method of approach to tumours occupying the premaxillary region and lower part of the nasal cavities preferable to a Rouge operation as it gives much better access, and the resulting scar is scarcely noticeable It has the additional advantage that should the tumour be found to extend upwards and backwards more room can easily be obtained by carrying the lateral nasal incision or incisions upwards as far as the root of the nose The external nose can be turned upwards, if necessary, giving with the reflected cheeks very free access

For tumours situated primarily in the nose, antrum or ethmoid, Moure's incision gives excellent access This incision again can be extended round the ala of the nose and through the centre of the upper lip if the tumour is found to extend downwards to the bony partition between the nose and mouth Incisions of this nature allow the surgeon to remove sufficient bone to expose all tumours of the nose and nasal sinuses with the exception of the frontal sinus When that cavity is involved the case may be considered inoperable.

Although it has been stated by some authorities that a formal excision of the upper jaw is never called for, it must be admitted that when a growth of the alveolus or hard palate has invaded the floor of the nose or antrum, or when a tumour primarily in the nose has grown downwards into the mouth, any operation for its removal closely resembles the operation originally described by Ferguson With a suitable dental apparatus the deformity is slight. The transverse part of the classical incision in line with the lower orbital margin is never necessary, as ample room is obtainable without it If more room is required the cheek may be split by an incision carried backward from the angle of the mouth When the alveolus and floor of the antrum are involved it may be possible to divide the hard palate to one side of the middle line so conserving more than half of that structure In other cases more than half of the superior maxilla may have to be sacrificed In all such cases care should be taken to preserve the soft palate unless it is invaded by growth In cases where a portion, sometimes the greater part, of the hard palate has been removed there is this advantage an admirable view of the cavity resulting from the operation can be obtained and a recurrence in *its early stages brought into view In two of my cases*, not recorded in this series because treated less than five years ago, recurrences were observed and treated with success With the exception of the skin incision all the dissections, so far as they concern the soft tissues, can be carried out with the endothermy knife, thus obviating much bleeding Whatever form the operation takes, the diathermy button should be applied to the cavity left after removal of the tumour and to all bony edges This means that there will be subsequent sequestra, but the risk of recurrence is further reduced

Treatment of the Gland Areas

The treatment of metastases in the cervical lymphatic glands presents many difficult problems On palpation there may be no evidence of glandular disease, and yet at operation secondary deposits are discovered On the other hand, enlarged glands diagnosed clinically as malignant may prove on microscopic examination to be inflammatory Where the disease in the lymphatics is still in its early stage, provided the primary tumour is a favourable one for operation, it is very important to carry out a radical procedure in the neck It is certainly disconcerting, in cases where the glands appeared from clinical examination to be invaded, to receive a report from the pathologist that no evidence of malignant disease can be discovered in the tissue removed It must be admitted, however, that even the most thorough biopsy must often fail to reveal minute seeds of malignant disease present in the glands. Every surgeon has met with the patient who develops metastases in the neck, sometimes on the side opposite to the primary tumour, many years after a successful operation on the primary tumour Had the glands been removed in the first instance what would have been the report of the pathologist ? In patients presenting no signs of metastases it is often a difficult question to decide for or against a neck operation

With small superficial tumours local removal should be carried out and the neck kept under observation Fairly frequent examinations are necessary as sometimes glandular metastases appear with a rapidity which is disconcerting and in the most unlikely cases The age of the patient, the state of his general health, the likelihood of obtaining a lasting cure, the experience of the operator, the site, character, and size of the primary growth are all matters requiring consideration before embarking on an extensive operation associated with considerable risk

When it is decided not to operate on the neck irradiation should be employed In cases when X ray or radium treatment is contemplated the patient should, if possible, be examined in consultation with an expert radiotherapist before any operation on the primary tumour or glands The histology of the growth may play some part in determining the best form of treatment

In cases where there are definite cervical metastases, movable and of limited extent, and where the patient is not too old or too feeble to undergo a trying operation, the prospects, moreover, of complete removal of the primary growth being good, then a block dissection of the neck should be carried out When the glands appear after a successful operation on the original tumour, surgery again offers the best chance of success It is possible that treatment with rays should always follow operation When the glandular disease is widespread, or if a mass of growth is fixed to the deep structures little hope of a cure exists Occasionally operation on an apparently most unfavourable case is followed by freedom from disease for a long period However, the operation may prove exacting to both patient and surgeon, and it may have to be abandoned before completion In some advanced cases there is more justification for the insertion of radium either through the skin, or after opening up the neck, or for treatment with teleradium, or by deep X ray therapy, although from such treatment relief rather than cure is to be expected The presence of glandular metastases greatly prejudices the future of the patient, but a combination of surgery and radiotherapy may eventually lead to better results

In my series of 23 patients with carcinoma of the tonsil with proved secondary glands, three are alive after periods of over 10, 8, and 7 years, and one patient with glands secondary to carcinoma of the cheek is alive nearly 8 years after operation

In 1021 I showed a case at the Royal Society of Medicine operated on nearly nine years previously for an epithelioma of the right auricle (microscopically proved) with a very large mass of glands The auricle was excised and a block dissection carried out in one act The glands were so formidable and extended so high up in the neck that I thought it advisable to expose and occlude the lateral sinus to minimise the risk of bleeding from the jugular vein during excision of this structure (Patterson, 1913, 1921)

Very advanced cases have been known to survive after excision for over 5 years (Butlin's case), over 4 years (Trotter, 2 cases), nearly 9 years (author's case) Diathermy having been chosen for treatment of the primary growth and removal being thought necessary, it is advisable in most cases to operate on the neck about three weeks before dealing with the primary tumour The following are reasons for this procedure —

(1) After treatment of the primary carcinoma the patient may think that the disease has been completely destroyed The source of his discomfort or pain has been removed and he may refuse further operative treatment.

(2) Following diathermy there may be inflammatory changes in the neck which make a clean and thorough dissection difficult

(3) An opportunity is presented of tying the external carotid artery

It is not my intention to enter into a detailed description of the gland operation I have been in the habit of using the knife for most of the dissection, and the sharper the knife the less bruising of tissues and subsequent shock Blunt dissection may occasionally be employed, as in clearing out the structures low down on the left side of the neck In this region a knife, unless used with extreme care, may cause injury to the thoracic duct I have tried the endothermy knife, as recommended by Wyeth, for neck dissections but it fails to stop hæmorrhage from any but the smaller vessels and it may cause damage to important vessels and nerves

It is impossible to ensure anything like a thorough eradication of the glandular areas without removing the greater part of the sternomastoid From the anterior and posterior triangles and from the sub-sternomastoid region all glands and fasciæ must be cleared away In a muscular neck the triangles may be said scarcely to exist the region covered by the sternomastoid being a very extensive one. The dissection should be carried downwards nearly as far as the clavicle In an upward direction it reaches the muscles forming the floor of the mouth and further back it extends to the base of the skull During this part of the operation the cervical portion of the parotid gland should be freed from its surroundings and temporarily retracted upwards. It is usually unnecessary to remove any portion of this gland, although it is sometimes ill-defined and therefore difficult to isolate.

Enlarged glands when present are frequently situated high up in the neck underneath the upper part of the sternomastoid. Sometimes it is better to sever the upper end of the jugular vein before separating the gland mass from the deep structures, but this ligature of the vein can generally with advantage be left to the very end of the dissection. In rare instances it may be wise to expose and occlude the lateral sinus as a preliminary measure The question of whether or not to remove a large segment of the jugular vein should be decided when possible before much disturbance of parts has taken place. When the affected glands are in very intimate relationship to the vein, or where palpable glands are situated behind it, resection must be carried out. In the majority of cases the vein must be sacrificed. It must be borne in mind that the superior cervical ganglion of the sympathetic feels to the palpating finger very like an enlarged gland. A calcareous patch in one of the carotid vessels may also be mistaken for a malignant deposit. When it is decided to leave the jugular vein in situ, as in a case where there is very little glandular enlargement, or when the vein has been resected on the opposite side, care must be taken that it is not entirely denuded of fascial coverings, as thrombosis is liable to occur.

Sometimes both sides of the neck must be cleared, but the double operation should never be undertaken at the same time.

Apart from those cases where the disease in the neck is obviously ineradicable—cases where ray treatment will be employed—there are others where an operation on the neck may be omitted or postponed. It is obvious, if the primary tumour is incurable, that no operation on the neck should be undertaken. Occasionally, though rarely, an operation of more limited extent than a block dissection may be thought to be sufficient; for instance, the operation may be confined to the upper part of the neck. Cases of carcinoma of the nose, nasal sinuses, and upper jaw, except when advanced, are generally free from metastases. Even extensive cancer of the hard palate seldom invades the glands Some surgeons regard cancer of the mucous membrane of the cheek as likely to be associated with early involvement of the cervical glands My experience is that so long as the disease remains superficial this is not the case, and therefore the prognosis is favourable after local removal.

I am much indebted to Prof. H. M Turnbull, of the London Hospital, for the great trouble he has taken in studying the pathology of my cases I am deeply grateful to my late house surgeon, Mr F J. Wright, for much painstaking work, more especially in the tracing of patients

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In the section on the Tonsil, Faucial Pillars, and Soft Palate, published last week, it was stated immediately under the heading "Results" (p 636) that of 51 cases treated over five years ago "11 lived over five years = 22 per cent" This should read "12 lived over five years = 24 per cent"

A SOUTHEND MATERNITY HOME.—Lady Dron recently opened a small maternity home in Southchurch Boulevard, Southend-on-Sea There are eight separate rooms, a theatre, and the usual adjuncts

CORNS AND CALLOSITIES

THEIR DIAGNOSTIC VALUE AND TREATMENT

By A T Fripp, M.B Oxon, F R C S Eng
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There has been little controversy on the subject of corns for some years, and the generally accepted view is that these local thickenings of the horny layer of the skin are usually due to pressure and friction from ill fitting shoes This, however, disregards the nature and action of the foot which is supporting the weight of the body inside the shoe, and fails to take into account the fact that certain combinations of muscle pulls result in a bony prominence being forced against a portion of the shoe, thus increasing the pressure on the skin over localised areas Ill fitting shoes are undoubtedly one of the factors in producing corns, but faulty muscle balance below the knee is another factor of equal importance, especially when the shoes are well made Muscle balance below the knee is complicated, as it involves the harmonious action of some 30 muscles in each leg, a résumé is given in a later paragraph, and each of us has discussed aspects of this question elsewhere[1 2] Instead of being looked upon merely as local features to be eradicated, corns may well be regarded as useful warnings against greater evils, such as footstrain and other postural defects in the standing position

There are three conditions which are apt to be confused, because they all give rise to a localised alteration of the skin of the foot, and to pain which may be excruciating, but they are in fact quite separate entities These are corns, callosities, and plantar warts

A *corn* is a thickening in the skin with a downward spike of hard horny keratin extending into the underlying corium, a *callosity* is an even thickening of the horny layer which develops (as under the metatarsal heads) a yellowish translucency. They are both the reaction of the skin to a combination of pressure and friction, the callosity being a physiological and the corn a pathological reaction A *plantar wart*, which is often rather like a corn in appearance, is due to an infective agent and does not come under discussion here

CAUSES

Bad muscular habits—These are liable to be overlooked, for a person often finds it hard to describe how he habitually stands or walks, and, consequently, he may be entirely unconscious of the nature or even the existence, of his bad habits Further if he knows that he is being watched he thinks how he should stand and so these bad habits are concealed while he is being examined Hence, when the muscular behaviour of a patient is being investigated, the position of a corn or callosity on the foot may tell a useful tale, and it is especially important to take note of such evidence when a patient is seen in bed during early convalescence After an injury or a period of bad health the natural resistance of the tissues is lowered and bad muscular habits, which have for some years passed unnoticed give rise to symptoms and prolong the disability In brief corns are often an indication that the patient walks badly and after an illness the period of convalescence can be considerably reduced if any bad habits are corrected and the muscle balance in the foot is restored before the patient is allowed up

Ill-fitting shoes—These must be held responsible for some corns, occasionally by causing undue pressure on some bone or joint, but more often by making the person walk badly and so upsetting the mechanics and muscle balance of the foot. This is more commonly seen in women than in men, as feminine vanity is involved, and there are three chief ways in which the shoe may be at fault

(*a*) If the supporting surface above the heel is inclined forward instead of being horizontal (as it is in a well made shoe) the foot also slips forward and the toes are jammed into the narrow toe cap As Bankart points out, this cramps the action of the toes and causes corns on the interphalangeal joints or on the pads near the nails[3] The same trouble arises when the distance in the shoe "from heel to ball" is excessive so that part of the ball of the big toe rests on an inclined plane Similarly, if the shoes or stockings are too short, the toes remain curled up with the nails resting on the sole of the shoe.

(*b*) If the sole is too narrow across the metatarsal heads the first metatarsal protrudes and does not rest firmly on it Also, the other metatarsal heads are forced downwards and callosities are found under them Evidence of this can be seen in the shoe if the sole is pressed down in the centre and shows little sign of wear at the edges As a rule, however, faulty muscle balance must also be taken into account when corns are found in these positions For overgrowth of the transverse plantar pad which gives rise to the callosities, is the result of failure to distribute a due proportion of the body weight on to the toes and of excessive pressure under the metatarsal heads

(*c*) A callosity at the back of the heel with no signs of wear on the lining of the shoe on either side of the os calcis shows that the shoes are too wide at the heel This defect in a shoe is important for patients with weak feet, as lack of support on either side of the os calcis allows its upper surface to slope inwards and renders the bone an unstable support for the weight resting upon it, transmitted through the astragalus

MUSCLE BALANCE BELOW THE KNEE

Adequate muscle balance below the knee—This is required for the support and control of the body-weight, both in starting and checking its movement Without muscle balance we find a misshapen foot with localised areas of pressure against the shoe If, on the contrary, the foot is kept shapely and compact by suitable action of the muscles, the body weight is distributed equally over its bearing surfaces and corns are avoided

It must be remembered that the human foot is not a solid structure like a hoof for when relaxed it should be freely mobile, and when supporting the body it varies considerably in shape to suit the stresses thrown upon it This is brought about by the coördination of some 30 muscles in which each assists the others, but failure of one muscle cannot be compensated by overaction of another

During weight bearing, muscle balance below the knee depends on the small muscles in the foot making the foot into a firm anchorage for the long muscles which by passing over the ankle stabilise it and balance the leg (with the weight above) on the foot; the long muscles assist the small ones to make the foot compact and free from strain. The foot should actually be smaller when balancing on one leg than when standing at ease on two but if muscle balance is poor an increase of weight thrown on a foot forces localised areas of skin against the shoe leather, and corns result

The following types of faulty muscle balance are given as examples Firstly, if the big toe and the inner side of the foot are not stiffened and the pad of the toe is not applied to the ground, the head of its metatarsal bone is forced at each step against the shoe so that a corn follows, and possibly a bunion Secondly, if the remaining toes are not extended and their pads applied to the ground, the long muscles tend to retract the toes, so that callosities and corns are found near the nails, on the prominent joints, and on the sole under the metatarsal heads Thirdly, if the forepart of the foot is not prevented from spreading under the body-weight, or if an undue proportion of weight is borne on the outer border especially when the little toe is drawn under, corns tend to develop on the outer border of the foot or on the little toe In these cases the corns give an idea of the posture and gait

Discussion of the various causes that lead to faulty muscle balance is beyond the scope of this article, but one point deserves emphasis In cases of flat-foot, and especially in children, exercises are often prescribed to improve the "prehensile" or grasping ability of the foot (such as picking up a marble with the toes) These make the patient curl his toes up, with overaction of the long flexors and inhibition of the intrinsic muscles But this produces an effect which is the exact opposite of what we want, and it seems that these exercises, if not definitely harmful, at least fail to teach correct use of the toes. It has been pointed out by one of us [1] that the first action in a baby's foot is to curl the toes up in the prehensile attitude and that the action of walking with extended toes on a flat surface develops later If, then, disuse of the intrinsic muscles develops after an illness, it is possible that this is in part associated with the loss of the more recently acquired habit of walking with extended toes and a reversion to the habit of our ancestors of using the feet for grasping.

VICIOUS CIRCLES

It appears, then, that there are two factors in the causation of corns. faulty muscle balance in the foot and ill-fitting shoes; and while in some cases only one of these is involved, in others both factors are at work Thus a vicious circle develops when a corn is pressed on by a shoe which might otherwise be suitable, for the person walks in such a way as to avoid pressure on it and so further upsets his muscle balance. When he suffers pain owing to a sensitive corn, a person alters his manner of walking and uses to excess certain muscles which become fatigued, while avoiding the use of other muscles The shoe then becomes progressively more unsuitable and the muscle action deteriorates still more Ligamentous strain, teno-synovitis, or swelling from circulatory disturbances follow, and for breaking the vicious circle the restoration of correct muscle balance is essential

Atypical cases are sometimes met with Corns may occur where the nail of one toe impinges on the skin of an adjacent one Occupations other than walking cause an unusual distribution of pressure on localised areas of the foot, for instance, riding may give callosities on the outer border of the foot, an unusual manner of applying the foot-brake of a car or of working some treadle machine may cause localised areas of pressure, so that callosities result

TREATMENT

This may be considered under four headings: (a) restoration of muscle balance, (b) advice about shoes, (c) palliative measures; and (d) surgery.

Much has been written in the past about palliative and surgical measures, and in most cases treatment has consisted of one of them, coupled perhaps with some rather vague advice to get larger or specially made shoes. But it is well to recognise that if the cause remains, the corn recurs Hence palliative measures are unsatisfactory, as they have to be repeated, while surgery can often be avoided if faulty muscle balance is adjusted.

Furthermore, the particular exercises which adjustment involves have the effect of increasing the blood-supply, not only to the muscles themselves but to the whole foot, and therefore this is a most useful line of treatment in dealing with corns and bunions which are inflamed or discharging We have seen such cases clear up rapidly after one or two treatments by exercises, when many other forms of treatment had been tried without any improvement

(a) The *restoration of proper muscle balance*—This entails chiefly the re-education of the interossei, the proper use of the toes, and a reduced action of long muscles This is achieved by exercises which can be taught in two or at the most three visits and can then be carried out by the patient at home The method of re-education has been described by one of us [2] For example, in a foot in which a callosity or corn on an interphalangeal joint bears witness to the intensity of the muscular pull against the upper of the shoe, the action of the short flexors requires to be increased With a view to regaining a normal attitude of the toes the heel should at first be elevated by being placed on a book, so as to compensate for the overgrowth of the transverse plantar pad and to enable the pads of the contracted toes to reach the ground The toes may then be encouraged to uncurl in contact with the supporting surface, the patient's attention being fixed on the tactile sensations aroused A simple exerciser which facilitates teaching the normal use of muscles in the foot is supplied by Kelling Sanatorium Industries, Holt, Norfolk

Restoration of muscle balance eliminates the pressure which was responsible for the corn, but to allow a normal extension of the toes, so that the pads may be applied to the ground, a larger size of stockings and possibly of shoes may be desirable. Hosiery firms tend to make stockings unduly large in the ankle in comparison to their foot length, for comely limbs

There are two lines of treatment which are sometimes advisable in conjunction with the exercises, as they hasten the re-education of the intrinsic muscles First, faradic foot baths improve the blood-supply and so help to restore to normal the atrophied and anæmic intrinsic muscles; and secondly, a band of strapping applied to the foot prevents spreading of the forepart of the foot and relieves the pressure on the fifth toe or outer border of the foot This should be 1½ in wide and should be bound, not too tightly, round the foot just behind the metatarsal heads.

(b) *Shoes*—These are more often at fault in women than in men, and while it is both useless and unnecessary to tell a woman to wear shoes that are theoretically correct with a low heel and straight inner border, the following points should be seen to:—

1 Length from "heel to ball" While the overall length of the shoe is always important, in a high-heeled shoe the length from heel to ball should also be correct If the shoe is too long from the back of the heel to the broadest part, the ball of the big toe does not rest flat upon the ground, but upon the sloping front part of the waist

2 The supporting surface for the heel should be horizontal and not inclined forwards

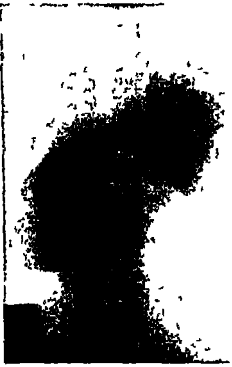

FIG 1.—Before operation. Obstruction due to volvulus.

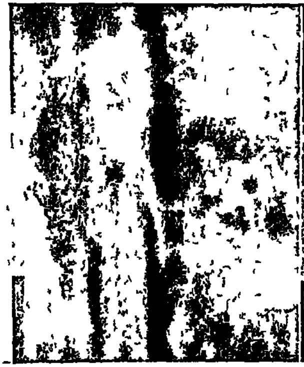

FIG 2.—Day after operation. Showing diverticulosis of jejunum.

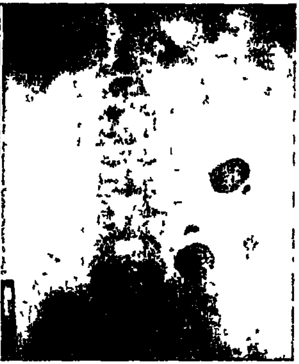

FIG 3.—Eleven days after operation. Retention in two large pouches.

The acute condition was caused by a volvulus high up past which the bismuth meal was struggling to descend. The volvulus was caused by the interlocking of a diverticulum, the size of a hen's egg, from the ileum low down near the ileocæcal valve, with a diverticulum of similar size, from the jejunum high up near the termination of the duodenum. The necks were twisted, causing a band over which a loop of small intestine was kinked, causing obstruction. On freeing the interlocking of the diverticula the barium meal began to pass normally. I closed the abdomen, and the patient made an uneventful recovery.

I took a series of radiograms, beginning the day after operation, and they demonstrate the gradual emptying of the diverticula (Figs 2 and 3), all traces of bismuth disappearing in 12 days.

There is an exhaustive study of the subject by Mr Ian Fraser in the *British Journal of Surgery* (1933, xxi, 183).

A CASE OF SPONTANEOUS INTRAPERITONEAL HÆMORRHAGE

By F C Chitty, M C, M B Aberd, F R C S Edin

ACTING SURGEON, PENANG, STRAITS SETTLEMENTS AND

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The case of "splanchnostaxis" reported in The Lancet of Feb 10th, 1934 (p 280), by H Hartley and D M MacKechnie prompts us to record this very similar case.

A Chinese male aged 40 years, by occupation a clerk, was admitted to the district hospital at Ipoh on Sept 8th, 1933, at 7 P M. He gave a history of epigastric pain following meals for a long time (period indefinite). At 5 P M on the day of admission he had a sudden severe pain in the upper abdomen after a meal. There was no vomiting. There was no history of trauma, a point about which the patient was quite definite even after the operation, when he was again interrogated. On examination the breathing was thoracic and the abdomen immobile. There was diffuse tenderness, marked generalised rigidity, and shifting dullness. The pulse rate was 136 and the pulse of fair volume; temperature 103° F; hæmoglobin, 55 per cent. The blood was negative for malaria.

A diagnosis of probable perforation of gastric or duodenal ulcer was made and immediate operation was performed. Under open ether a small suprapubic incision was first made to determine the character of the exudate. Pure blood was found filling the abdomen. The abdomen was then opened by an upper rectus splitting incision and the spleen examined most carefully by delivering it through the wound, which was easily done in this case. It was normal in size and was not ruptured, and was therefore returned to the abdomen.

Liver, gall bladder, stomach, duodenum, and pancreas all appeared normal, and there was no fat necrosis. Attention was then directed to the lower abdomen by extending the incision. The omentum was lightly adherent to the parietal peritoneum in the right iliac region by recent fibrinous adhesions which separated at a light touch. The appendix was normal. The last few inches of ileum were very red, and there was a steady though moderate ooze of blood from the peritoneal surface of the ileum. Whether this was the actual source of the blood in the peritoneal cavity, or whether the ooze only started on sweeping up the omentum by the hand could not be determined. At any rate it was the only actual bleeding site discovered. The abdomen was closed after removal of blood, and a tube drain was inserted into the suprapubic opening for 48 hours. An immediate injection of 4 c cm of hæmoplastin was given.

After operation the discharge of blood from the suprapubic opening was moderate in amount, and soon became sero-sanguineous and ceased. The temperature settled down until the fifth day, when he had rigors and subtertian malaria parasites were found in the blood. The malaria was treated by quinine. The pulse rate remained in the neighbourhood of 120 for a fortnight. There was no melæna at any time. A few days after operation it was noticed that the face had a dusky cyanotic tint, but the heart showed no clinical abnormality. The patient made a satisfactory recovery.

Clinically, the possible causes which might give rise to such a condition appear to be:—

(1) *Trauma*.—The spleen (the usual source of traumatic intraperitoneal bleeding in the tropics) was intact and the patient was very definite that there was no trauma.

(2) *Subtertian malaria*.—Though the patient had malaria this would be unlikely to give rise to free bleeding into the peritoneum.

(3) *Ambulatory typhoid*.—The absence of any perforation in the ileum as a cause of the bleeding into the peritoneum and the negative Widal test rule this out.

(4) *Hæmophilia*.—Of this condition Osler says, "Abdominal colic due to bleeding into the intestinal wall

occur as in Henoch's purpura" Against this as the cause is the absence of any history of previous "bleeding," and the fact that the healing of the wound was normal. Also the coagulation time was almost normal.

(5) *Henoch's purpura* —The reddened ileum and the sudden abdominal pain favour this as the cause, but whether free bleeding can occur into the peritoneum in Henoch's purpura is not known to us Against it is the absence of any purpuric spots on the patient Application of a tourniquet to the arm for ten minutes failed to give purpuric spots

(6) *Hæmorrhagic pancreatitis* —The absence of fat necrosis and the normal appearance of the pancreas and the survival of the patient with simple suprapubic drainage are against this The stools were quite normal in appearance.

(7) *Chronic hæmorrhagic peritonitis* —Of this Osler says. ". . It is rarely diffuse, more commonly circumscribed Probably the spontaneous peritoneal hæmorrhage with the features of an 'acute abdomen' (Churchman) may represent the primary form of this rare condition" This appears to accord best with the features of the present case though, apart from giving it a label, the cause of the condition remains obscure

The operation revealed no visible organic lesion in the abdominal cavity to account for the hæmorrhage. Medical examination, likewise, did not render much assistance in detecting the causative factor. The presence of subtertian parasites in the blood, with an accompanying secondary anæmia and lowered hæmoglobin content, and a pyelocystitis, were the only positive findings by the hospital staff. It is just possible that these infections may have had some bearing on the condition. Various laboratory investigations were carried out, mainly with a view to eliminating any hæmorrhagic disturbance which might have been present :—

Blood —(Sept 20th, 1933) Red cells, 2,950,000 per c mm, white cells, 9062 per c mm, hæmoglobin, 55 per cent, colour-index, 0 9, platelet count, 145,000 per c mm, normal in size and shape, coagulation time, 9 minutes (capillary), bleeding time, 3 minutes, fragility of red cells, normal (hæmolysis commenced in 0 42 per cent. saline and was complete in 0 32 per cent saline), Arneth index, definite shift to the left (index = 93). Schilling index: total leucocytes, 9062 per c mm, eosinophils, 0, basophils, 0, lymphocytes, 12 per cent = 1087 per c mm ; monocytes, 5 per cent = 453 per c mm.; myelocytes, 0, young forms of metamyelocytes, 1 per cent. = 91, band forms of metamyelocytes, 32 per cent = 2900, polymorphs, 50 per cent = 4531, total neutrophils, 83 per cent = 7522 per c.mm

Tourniquet test. no petechiæ or purpuric spots produced Blood films. no parasites found; slight polychromasia; fair numbers of punctate basophilia, no evidence of any of the "anæmias" or "leukæmias." Blood cultures remained sterile Cultures from blood clot sterile Widal and Weil-Felix reactions: no diagnostic titres obtained

Urine —Microscopical examination of a centrifuged deposit showed the presence of numerous leucocytes, a heavy bacillary infection, and occasional leucocyte casts On culture a coliform organism was isolated

Stools —Microscopical examination was entirely negative; no ova of intestinal worms found, no amœbæ or cysts, no red blood-cells, pus cells, or macrophage cells seen On culture no enteric or dysentery group of organisms could be isolated Benzidine test for occult blood was negative

The positive findings in these investigations may be summarised. (*a*) secondary anæmia; (*b*) diminished hæmoglobin content; (*c*) slight decrease in colour-index; (*d*) diminished platelet count; (*e*) Arneth index, shift to the left; (*f*) Schilling index, shift to the left with moderately severe neutrophilia, eosinopenia, and increase in band forms; and (*g*) pyelocystitis From these findings one can almost certainly exclude leukæmic processes, bone-marrow and splenic diseases The determination of the coagulation time and the platelet count indicate some change in the concentration of the constituents of the blood. The bleeding time is not an index on which much reliance can be placed, owing to the very variable factors which may be present in each individual case.

The tourniquet test was negative, and the patient's fluid output was normal—both of which findings suggest the absence of vascular dysfunction or a diminished capillary resistance. On the other hand, vascular structure may be affected by such varying conditions as trauma, increased pressure, lack of nutritional elements—quite a possibility in the tropics—bacterial invasion, chemical injury, and lymphatic infiltration, or by allergic substances and infective agents. Capillary hæmorrhages are not infrequent as consequences of vascular congestion in the course of chronic infections. With the exception of trauma, any of the causes of vascular dysfunction may have been at work in this case.

It is known that surgical operations are followed by a rise in the number of platelets, which reaches its maximum at about the tenth day after operation, so it is not unjustifiable to expect that in this case their number might have shown a much greater diminution had the count been performed earlier in the course of the disease Whilst the personal and familial history produced no evidence pointing to the possible presence of any of the so-called "hæmorrhagic diatheses," one cannot entirely eliminate this group. Hæmorrhagic problems can manifest very atypical and transitional signs when compared with their classic descriptions Conditions in which the number of platelets is diminished show a tendency towards spontaneous hæmorrhages, although a thrombocytopenia is not, in itself, considered as a sufficient cause

Such a localised hæmorrhage as was present in this case might be found more frequently as the result of systemic disease rather than active hæmorrhagic disease.

Our thanks are due to Dr. R D Fitzgerald, acting director, medical and health services, Straits Settlements, for permission to publish this case.

BILHARZIA AFFECTING THE LEFT URETER PRIMARILY

By H. F. Lowenthal, M.B. Liverp.

AND

R A. Roberts, M B. Liverp., D M.R.E.

A man, aged 32, consulted one of us (H. F. L) three months ago complaining of painful hæmaturia, loss of weight, and backache. There had been no genito-urinary disturbance till twelve months previously, when he occasionally passed blood at the end of micturition, with pain. Frequency of micturition, night sweats, and rigors were absent

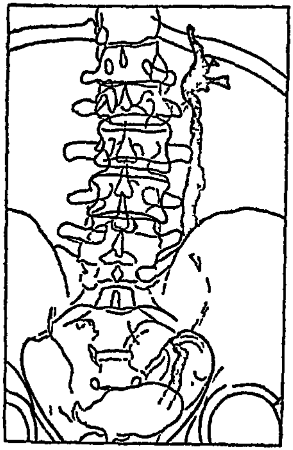
On examination nothing abnormal was found in the heart, lungs, or digestive system, but the left kidney region was tender and the lower pole just palpable Per rectum there was some thickening at base of bladder and tenderness to the left The urine at first examination contained blood ++, and microscopically a few columnar cells and red corpuscles At a second examination three days later an almost complete blood cast of the ureter was found Pus ++ No evidence of tuberculosis, but a mixed infection of staphylococci and *Bacillus coli* A blood count showed —

Red cells	2,900 000	Polymorph	56	per cent
White cells	7,000	Eosinophil	6	,,
		Small lymphocyte	32	,,
		Large lymphocyte	6	,,

At cystoscopy the trigone of the bladder was seen to be injected The right ureteric orifice was normal, but the left one was thickened and pouting, and blood was dripping from this ureter The clinical diagnosis at this stage was papilloma of renal pelvis and ureter with secondary infection (*The relative eosinophilia remained unexplained*) A radiological examination was made, however, and the left ureter was seen to be dilated along its whole length (see Figure) The shadow was uneven and not dense, and hydronephrosis was absent The radiological diagnosis was primary lesion of the left ureter

The blood urea was estimated at 35 mg per 100 c cm, and under chloroform and ether an operation was performed With Langenbeck's incision the kidney was readily exposed and the ureter was felt, being at least five times as thick as the normal Both kidney and ureter (in its entirety) were removed, and the incision was closed with drainage Convalescence was uneventful except *for hæmatoma which discharged through the apex* of the wound, all painful micturition ceased immediately, and urine was normal in 48 hours

The kidney appeared normal and there was no hydronephrosis The ureter was greatly thickened with scattered areas much thicker than the remainder, these thickened areas being macroscopically rather like angiomatous tissue *Sections of the ureter show chronic* inflammatory infiltration of the wall associated with fibroid tubercles in which a few ova of *Schistosoma hæmatobium* are deposited The polynuclear cells seen in the lumina of the gland like structures are probably evidence of the superimposed acute infection of the urinary tract



Drawing from pyelogram

Bilharzial infection of the ureter is occasionally met with and sometimes causes unilateral and even bilateral stricture, followed by fatal hydro or pyonephrosis Our patient, after three months, has had no recurrence of *symptoms* The urine remains *normal* but he is undergoing a course of tartar emetic injections.

We wish to thank Dr F W Simson of the South African Institute of Medical Research and Dr G H Pearson of the Kimberley Hospital for their pathological reports

Kimberley, South Africa

REVIEWS AND NOTICES OF BOOKS

Health Protection in the U S.S R.

By N A SEMASHKO, former People's Commissar for Health London Victor Gollancz Ltd 1934 Pp 176 3s 6d

IN this little book, Semashko, who was the first Commissar for Health in Russia after the revolution, and held the office for 12 years, describes fully the sort of organisation which has been set up for the preservation and improvement of the health of the people In the years of the civil war and the famine of 1921–22 attention had necessarily to be concentrated upon the control of epidemics and measures directed against starvation, in collaboration with the American Relief Administration, the Quakers, and Nansen's Relief Committee These *crises* being surmounted, the Commissariat, which has central responsibility for practically every governmental activity associated with medicine and public health, was able to devote itself to securing healthier working and living conditions The task was no light one The pre war medical service and the mode of living of the vast majority of the Russian peoples had been mediaeval in their primitiveness, the war and its aftermath had devastated a people unguarded from the ravages of disease

This book describes the local and central machinery rapidly set up by the Soviet Government and the kind and extent of the services it has provided In effect, these are exactly of the same nature as in any other modern community, when shorn of their revolutionary trappings and terminology National circumstances, just as in other countries, have determined the emphasis put upon some parts of the machine Food *problems have been met by a vast development of* communal feeding—in 1932 communal meals were served to 42 8 per cent of all "workers," 80 per cent. of university students and 25 per cent of office employees The demand for labour, which has made it imperative to bring a large proportion of women into employment (in strange contrast with the recent state of affairs in western countries), created a need for the rapid establishment of creches The places in creches numbered 231,400 in 1929 and 4 529,000 in 1932 The prevalence of abortion led to the much discussed legalisation of the operation, which is here justified by statistics Many such peculiarities might *be stressed*, but, *if the accent is different*, the theme is that of social workers and social reformers everywhere The great achievement *of Russia is to have* established in ten years a system approaching in form, and in some ways transcending, that which it has taken us a century to build up

Obstetric Medicine

By **Fred L. Adair**, M.A, M D, F A C S., Mary Campu Ryerson Professor of Obstetrics and Gynecology, University of Chicago, Chief of Service, Chicago Lying-In Hospital; and **Edward J. Stieglitz**, M S, M D., F.A.C P, Assistant Clinical Professor of Medicine, Rush Hospital College of the University of Chicago. London: Henry Kimpton 1934. Pp 743 36*s*

This book, to the text of which there are 37 contributors, deals with the effect of pregnancy upon the various ailments and diseases to which the human body is subject. The work is divided into 12 sections, a separate one being allotted to each of the eight recognised systems of the body. Additional sections include the specific infectious diseases, non-infectious diseases such as poisonings, deficiency and allergic diseases, and disorders of body mechanics, which includes orthopædic diseases and herniations. A veritable encyclopædia, the whole is, nevertheless, easy to read and indeed extremely interesting. After a summary of the current views upon the particular problem each author draws his own conclusions. Some idea of the care and thoroughness with which the work has been prepared can be obtained by consideration of the bibliography which contains about 1000 references. The chapters dealing with tuberculosis, deficiency diseases, and the vexed question of the advisability of wholesale dental extraction in pregnancy are of especial importance. Chapter XXXIV, by Harold Jones and Leandro Iocantius, upon the diseases of the blood also deserves mention This book will appeal to all doctors, but especially to those engaged in the practice of obstetrics who believe that a sound knowledge of medicine is essential to their work The editors disclaim any intention of offering a final presentation of the medical problems that confront the practitioner in the management of his obstetric patients, but it is certain that their work will stimulate further investigation of the problems common to physician and accoucheur

Surgical Anatomy and Physiology

By **Norman Lake**, M D, M.S, D.Sc Lond, F.R C S, Senior Surgeon, Charing Cross Hospital, Surgeon to the Bolingbroke Hospital; and **C Jennings Marshall**, M D., M.S, F.R C S, Surgeon to Charing Cross Hospital and the Victoria Hospital for Children. London: H K Lewis and Co, Ltd 1934 Pp. 888. 30*s*.

This is an original book, but so simple in its conception that it is rather remarkable that no one thought of writing it before. Treatises in plenty exist on applied anatomy and a few on applied physiology—notably, F. Rost's pathological physiology, but the idea of combining them is a new and happy thought We congratulate the authors on the production of a work which every surgeon would do well to possess

Wherever we have tested it the anatomy has been well described with sufficient emphasis on the clinical bearings, while the physiological matter has been judiciously selected and admirably presented. The book is a little large for the undergraduate, but if it had been compressed it would certainly have lost its main value It constitutes now a work of reference which will not only be used as such, but will be read for the pure interest of its subject matter The book is excellently printed and has a large number of illustrations, of which those by Miss Barclay Smith are extremely good; others by an unsigned artist show clearly the points the are meant to demonstrate, but are lacking in artisti technique.

The Constitution and its Reaction in Healt

By **T E Hammond**, F R C S, Assistant Surgeon The Royal Infirmary, Cardiff London H K Lewis and Co, Ltd. 1934 Pp 160. 7*s* 6*d*

Mr Hammond believes that there is more ill-healt at the present day than there was during last century in spite of the advance of medical knowledge and th development of organised medicine This, he think is due to the fact that people have lost the art o living His book aims at inculcating ideas abou man's habits and his relation to nature which, i adopted, would, in his opinion, act as a correctiv to the modern disregard of personal constitutio and idiosyncrasy in the conscious effort to preserv physical and mental health Stress is placed upo the importance of the central nervous system, upo "nervous activity" or "nerve energy," and upo the differences in this respect of "hyposthenic and "hypersthenic" types. The modern belie of the public in unlimited exposure to sun and fres air and in hard exercise is challenged Briefly Mr Hammond's plea is for moderation and adjustmen of life to the individual's mental and physical capacity He seems to be convinced that the public are bein misled in these matters, especially by the publi health service It is true, as he avers, that the drif of medicine from the family doctor to the polyclini leads to concentration of attention upon diseas and its manifestations rather than the patient an his well-being, but there is plenty of evidence tha the whole profession is alive to the danger, includin those who administer medical services

In Mr Hammond's book there is much unsubstantiated theorising. The words "probably" an "possibly" occur so often that one is tempted t query the basis of his suppositions. But he has bee able to communicate to his readers a sense of th need for the deliberate application of the forces ove which modern man has acquired power toward a healthy way of living, and some at least may b stimulated to thought and action by this book

A Student's Handbook of Clinical Electrocardiography

By **William Evans**, M D., M.R C.P Lond, Assistant Physician and Assistant Director of—the Medical Unit, London Hospital, late Paterson Research Scholar in the Cardiac Department London Hospital London: H. K Lewis and Co. Ltd. 1934. Pp 50. 5*s* 6*d*

It is still true to say that only the minority o doctors can read with intelligent understanding an electrocardiographic tracing, and it is humiliating to be unable to interpret what may prove to be o great help both in diagnosis and treatment Thi book gives a straightforward and clear account of what is known of the subject *without entering* into discussions of the possible significance of some obscure curve Each type of abnormality is illustrated by an excellent tracing, the different waves being marked so as to make them easily understood. At the end of the book four pages of test electrocardiograms are given together with a key. The book has the virtue of brevity, and will certainly be appreciated by the qualified man as well as by the student, for whom it is primarily intended.

THE LANCET

LONDON SATURDAY, SEPTEMBER 29, 1934

VITAMIN A AND THE SKIN

When it becomes possible to relate a definite pathological condition to a specific dietetic deficiency we are obviously much better equipped in our efforts to improve feeding and health Thus the diminution of rickets and infantile scurvy in this country is largely due to knowledge of the early symptoms of these diseases and of the deficiencies whence they arise It is the possibilities of improved health which they offer which give importance to some recent papers on vitamin-A deficiency and its early manifestations Two of them are based on observations abroad—in East Africa and Ceylon Dr **Loewenthal** and his co-workers[1] in Uganda have studied the effects of this deficiency chiefly in East African gaols, and fully describe the cutaneous changes it causes—namely, "a dryness of the whole skin, with the exception of the face, associated with a papular eruption, most apparent on the extensor surfaces Histologically these papules are found to have as their nucleus an altered pilo-sebaceous follicle," the papules being smooth-topped, black, shiny, and very irritable These skin changes disappeared completely when cod-liver oil was administered daily, without other change in the diet, in two cases vitamin A was given in the form of Avoleum with a similar result They were usually an earlier sign of the disease than any objective ocular changes, thus of 81 prisoners segregated for observation, 74 suffered from the dermatosis and only 45 from xerophthalmia A **Pillat** in China in 1929, and later C N **Frazier** and C K **Hu** also in China, described in vitamin-A deficiency a dry skin associated with comedones or spinous keratinised papules at the site of hair follicles on limbs and trunk, and they were presumably referring to the same type of lesion.

Dr **Lucius Nicholls** draws attention[2] to the widespread incidence of a similar dermatosis in Ceylon Many years ago he noticed in East Africa among gangs of "more or less" indentured labourers a dry goose skin with the formation of papules The labourers arrived from their villages with healthy shining skins, but they were subsequently fed almost entirely on maize meal and then they developed the kind of skin he describes A mild form of neuritis, or at any rate of muscular weakness with wasting, was prevalent, and many died from dysentery A disease of the same kind, he says, was prevalent among the porters of the Carrier Corps in East Africa during the late war, and now he finds it again in Ceylon His earlier report deals with the condition as seen in a Ceylon prison He writes of "a papular dry skin eruption frequently accompanied by a mild neuritis and (or) eye symptoms, such as night blindness, dimness of sight, xerophthalmia, or keratomalacia, the patients are very liable to diarrhoea or dysentery, when this occurs the neuritis becomes more marked, a high mortality results" According to Dr D C **de Fonseka**, whom he quotes, the inhabitants call this condition *mandama* or toad-skin, and **Nicholls** proposes to translate this as "phrynoderma" Whether the muscular weakness and wasting are due to neuritis he left open, as also the question of other possible deficiencies in the diet which might account for the nervous lesion, but in a letter to the *Indian Medical Gazette* for August (p 476) he says he has found in children dying with what he has termed neuritis "early myelin degeneration in patches in the posterior and lateral columns," as well as changes in the anterior horn cells The phrynoderma, he says, is often associated (*a*) with sore mouth, either patches of superficial erosion of the mucous membrane of the tongue or lower lip, or, in its later stages, a red glazed tongue, and (*b*) with excoriation at the angles of the mouth This sore mouth he personally considers also evidence of vitamin-A deficiency In his more recent paper he gives some particulars of the incidence of phrynoderma in Ceylon, where 5000 children were recently inspected in schools and institutions Among nearly 4000 attending vernacular schools the incidence of phrynoderma was about 20 per cent, in a school attended by "upper class" Ceylonese children it dropped to less than 3 per cent, and in a charity boarding school it was 83 per cent What figures are available for adult workers suggest that among these the incidence is lower than in children In the gaols he found among prisoners resident for less than a month an incidence of about 10 per cent, whereas among those who had been on the prison diet for longer periods it was 55 per cent The preventable damage to health and well being implied by such figures can well be imagined by those who have watched, in a child suffering from this deficiency, the change—from mental and physical apathy to health and vigour—which is wrought by giving vitamin A in adequate [illegible] That the condition is widespread is shown by the fact that it has been recognised by Dr E J **Wright**[3] in Sierra Leone, and by Dr G. P. **Goodwin**[4] in London Now that the [illegible] has been recognised it seems [illegible] will be commonly observed in many parts of the world.

Whether increased [illegible] to [illegible] infections [illegible] in the skin is an [illegible] already reviewed [illegible] Dr **Helen** [illegible] association between such infections and xerophthalmia which is often noticeable in accounts of vitamin-A deficiency. In another since published [5] she describes an investigation lasting nearly two years in which 118 London babies were under observation, one group dependent solely on their milk or table food for their supplies of vitamin A, the other group receiving a supplement of this vitamin *The results strongly suggest that the* first group did not get enough vitamin A and that the earliest effect of the slight deficiency was a greater susceptibility to the minor skin infections of infancy, such as napkin dermatitis, intertrigo, or "dribbling" dermatitis It is definitely known that insufficiency of vitamin A causes a keratinisation of epithelial cells and it is probable that in the very early stages of this change the entrance of micro-organisms is facilitated

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[1] Mitchell, J P, Owen H B, and Loewenthal L J A East African Med Jour May 1933 p 38 Loewenthal Arch Derm and Syph 1933 xxviii 700

[2] Nicholls L. Indian Med Gaz., 1934 lxix., 241 1933, lxviii 681

[3] Wright [illegible] Leone [illegible]

[4] Goodwin [illegible]

The time has come perhaps when so important a condition should have a less cumbrous name than "vitamin-A deficiency disease" If so the new title ought to indicate the keratosis which is the characteristic pathological lesion.

VERDICT OF MURDER WITHOUT EVIDENCE OF A CORPSE

At the trial of Davidson last week the accused was found guilty of murder notwithstanding the absence of evidence (apart from his own statement) of a dead body. Such a result is unusual though not unique As the Crippen case showed, a tiny fragment of a human body may have fateful significance for the purpose of identification, but, where the police can produce no part of a body at all, powerful evidence is naturally required to establish that there was a death, to identify the dead person, and to connect the accused with the death of that person There is a well-known precedent in R *v* Hindmarsh where a seaman was found guilty of murdering the ship's captain There was acceptable evidence that Hindmarsh had been seen to throw the skipper's body overboard and that the skipper had never been seen again. Hindmarsh was convicted and hanged in spite of the plea that the victim might have been picked up alive by a passing vessel. Where it is alleged that a body has been disposed of on land, the police can generally produce the corpse or a part of it, post-mortem examination of the remains often produces the crucial proof which justifies conviction. In Davidson's case last week the authorities at Scotland Yard and the Director of Public Prosecutions were in a difficulty. Davidson's eight-year-old son had disappeared from the place where he lived at Hanwell. It could be proved that his father came and took him away, and that the boy *was never seen again, that being the* sole evidence against him except his own statements. Davidson made a confession to the police His relations with his wife were unhappy He took the boy, he said, to a canal bank at Stockley and jumped in with him. He himself got out but the boy was drowned. He placed the body on a dump of burning refuse at a spot which he afterwards pointed out to a detective-inspector Search was made at that point but nothing was found The problem for the authorities was whether they should spend several hundred pounds of public money in clearing the whole of the burning dump with the possible prospect of finding a skull *or other remains in partial corroboration of* Davidson's statement, or whether they should proceed on the accused's statement alone, or simply let the matter drop. They took the second of these three courses with the result already stated A confession of crime is normally the most acceptable evidence of guilt unless, as seems nowadays to happen with increasing frequency, it is a false confession due to hysteria or a desire for notoriety. Before 1926, when the Coroners (Amendment) Act was passed, details of evidence against a suspected person were largely accumulated by means of an inquest, since 1926 the coroner's investigation is broken off when a magisterial inquiry takes charge of the case against a particular accused person The old common-law insistence that an inquest should be *super visum corporis* (upon view of the body) could not be complied with if there was no body to view. With no coroner's inquest to assist the police in Davidson's case, were the police under an obligation to test his statement by clearing the whole of the burning dump and sifting all its contents? Is a confession of less evidential value because the charge is one of murder?

The jury recommended Davidson to mercy, doubtless because of the effect of his domestic anxieties upon his mind. It is the almost invariable practice that a conviction for murder is reviewed in the Court of Criminal Appeal, and Davidson, it is understood, will appeal on the usual grounds of insufficiency of evidence and misdirection by the judge His counsel will doubtless recall the seventeenth-century tragedy of Joan Perry and her two sons who were hanged for the murder of William Harrison Although no trace of Harrison's body was found, the evidence looked black enough against the Perrys, yet Harrison had merely gone abroad, and three years later he reappeared. Improved communications and a more expert system of police inquiry would probably nowadays avert such a miscarriage of justice Nevertheless the risk remains and the finality of the death sentence increases the public misgiving In this connexion should be noted the reluctance of judges to accept a plea of guilty on a murder charge on the rare occasions when such a plea is offered One of the few instances occurred at the trial of the Porlock murder at Somerset assizes 20 years ago. A farmer, believing a neighbour to be persecuting him in various mean ways, coolly shot his enemy as he passed along the road as he would have shot any other vermin on his fields The farmer insisted on pleading guilty His relatives briefed the present Attorney-General (then a member of the junior bar) to defend him and made frenzied search for possible evidence of insanity in the family Their efforts were in vain, but those who were present will not forget the anxiety of the judge to make the accused change his mind The farmer doggedly refused all help, he would not alter his plea, he told the judge he had killed the man and would do the like in like circumstances again There was no alternative but to pass a sentence of death In Davidson's case there was a plea of not guilty in spite of the earlier confession to the police The Court of Criminal Appeal will have the chance to give some guidance for future occasions when conviction rests upon the accused's statement alone

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[5] Mackay, H. M M · Arch Dis in Childhood, June, 1934, p. 133

THE B P C 1934

THE official pharmacopœia of any country can seldom include all the medicaments prescribed by its doctors There is need of supplementary books of reference to furnish information about substances which for one reason or another have been rejected from the pharmacopœia, but which are still fairly widely used and may indeed continue to be popular, and also about substances which have not yet attained pharmacopœial status The British Pharmacopœia, like others, has at each revision in recent times come to contain fewer galenical and compounded preparations, it tends more and more towards a book of standards and definitions "whereby the nature and composition of substances to be used in medicine may be ascertained and determined" In contrast, the British Pharmaceutical Codex 1934 which has just appeared[1] is issued, in the words of the title-page, as an Imperial dispensatory for the use of medical practitioners and pharmacists It contains a vast store of information of great value and interest, for it is not merely a formulary, it is also a book of standards for non-pharmacopœial substances when supplied for medicinal purposes, the general tests for purity being based on those of the B P In this issue the monographs on chemical substances and drugs of vegetable and animal origin have been extended to include descriptions of such things as activated charcoal, euflavine, extract of suprarenal cortex, œstrin, desiccated stomach, and scarlet fever streptococcus antitoxin These monographs follow in general the lines of those in the B P, but contain additional information, for example, helpful accounts of the action and uses of the drugs described, with notes on particular modes of administration and incompatibilities Where a drug has poisonous properties, suggestions for appropriate treatment of poisoning from this cause are offered Doses are given in both metric and imperial systems There is one departure from the convention adopted in the B P whereby doses of solids are expressed in grains and ounces only, doses of fluids in minims and fluid ounces The drachm (60 grains) is not officially recognised, although the B P recognises the fluid drachm In the Codex both drachm and fluid drachm are used

The formulary section of the Codex contains preparations or galenicals for the administration of the more important drugs in present-day use, notes on emulsions and other matters important to the pharmacist are also given The present B P formulæ are not included, but, with few exceptions, all the formulæ of the B P 1914 which were dropped in the 1932 issue We note the retention of the formula for Tincture of Chloroform and Morphine of the B P 1885, with "chlorodyne" as a synonym In other sections specifications will be found for surgical dressings, and articles on hydrogen-ion concentration, colloidal solutions, and sterilisation of apparatus, drugs, and dressings In one direction the volume is perhaps unnecessarily large, since pharmacopœial substances are described as fully as non-official ones The overlap between the two volumes is therefore considerable, and it would have been an advantage if official substances had been clearly distinguished from the non-official On the other hand, some space might well have been afforded to set out the regulations issued under the Dangerous Drugs Act and the present state of affairs in relation to poisons The formulary contains many preparations which have been specifically excluded from the restrictions under the Act, and it would have helped both prescribers and dispensers if these had been indicated A pharmacological index adds interest to the dispenser's work even if it does not materially help the prescriber, but both will appreciate the exhaustive list of proprietary trade names with an indication of the composition of the substances sold under that name The index contains some 10,000 items and will be a great boon to the purist

The practitioner is not as a rule greatly concerned with the origin and botanical characters of the crude drugs whose preparations he prescribes nor with the chemical tests for organic substances It follows that though he will find much to interest him in the Codex, notably in the sections on mode of administration of drugs and on incompatibles, its chief value is to the pharmacist In relation to the Food and Drugs (Adulteration) Act the B P has long enjoyed the status of a presumptive standard in this country, and in many parts of the Empire it becomes, when adopted, the definite legal standard for purity of drugs The Codex is steadily attaining a somewhat similar position as a recognised standard for non pharmacopœial substances The scope of the work is thus very different from that of Martindale and Westcott's "Extra Pharmacopœia," which is perhaps even more useful to the medical practitioner than to the pharmacist In many ways the two books are complementary By its nature the Codex is non selective, and like its predecessors it contains a curious mixture of old and new Actually, it does relegate to smaller type and to subsidiary monographs many substances about which information will only occasionally be sought, as they are seldom used in present-day practice But there can be little distinction between the space devoted to remedies passing into disuse and to those tentatively admitted or gradually entering use, though not yet accorded pharmacopœial status A study of the monographs and preparations of mercury, iron, and iodine, for example, or of the numerous purgatives, sheds an interesting light on fashions in medical practice The historian of the far future will find in successive issues of the B.P. and B.P C. ample material for a review of medical tendencies.

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[1] London The Pharmaceutical Press. Pp 1766 35s

ANNOTATIONS

THE INCORRIGIBLE SLUM-DWELLER

BETTER houses are needed nowhere, perhaps, more than in Glasgow, and Dr. A. K. Chalmers, formerly medical officer of health for the city, has frankly faced the problem of the slum-dweller in a paper[1] entitled, Can the "Undesirable Tenant" be trained in Citizenship? The question itself is a sign of the changed attitude towards undesirable tenants The days when official bodies were content to describe them as "the plague of the landlord and the terror of their respectable neighbours"[2] and to leave it at that, have gone by. As long as slums were publicly tolerated, all that the undesirable tenant had to do was to move from one slum to another, and indeed, as Dr. Chalmers points out, the problem was treated by a policy of studied neglect, houses of low grade being actually advocated as necessary for this section of the population. A slum area houses representatives of many social strains, "the defective, the diseased, the inefficient, the indifferent, the vicious, the criminal, and the simply dirty tenant intermingling with some who make a brave struggle with poverty, and more whose misfortune it is to have lost hope and acquired tolerance of their surroundings." Parliament draws no distinction between these groups, and in the past regularity in payment of rent has been the usual test by which tenants for vacant houses have been selected. The relationship of local authorities to housing provision has become more and more intimate, however, with each decade of the last century, until the present situation has been reached, in which slum clearance has been raised to the level of a definite and continuous administrative policy, local authorities being responsible for providing accommodation for occupiers of slum dwellings marked for demolition This policy of continuous displacement will at least do something to separate the sheep from the goats, and will bring into the open those displaying incorrigibly antisocial tendencies.

Much has happened in the last 30 years to modify the problem. The introduction of national insurance, the provision of transitional benefit, old age pensions and pensions for widows and orphans, and still more, Dr. Chalmers believes, the expansion of domestic supervision by doctors, nurses, and health visitors, has brought about a revolutionary change in the relationship between public health departments and individual families At the time of the Housing Commission's report (1904) the practice both of the Improvement Trust and of the Workmen's Dwellings Company was to exclude disorderly tenants altogether. This was perhaps almost inevitable in the interest of adjoining tenants, but it was obviously valueless to the rejected, removing them from all educative influences and driving them back to conditions comparable to those they had left. The Commission recommended the erection of a special type of building to be available for tenants willing to submit to certain regulations for promoting cleanliness and orderly living. The Moyne Report, issued a year ago, while not approving the policy of isolating the incorrigible, proposed as possibly desirable special houses of simplified construction intermingled with blocks of normal type. The difficulty would be to decide who should occupy these houses and to persuade the selected tenants to accept them Dr. Chalmers thinks that, in any case, the emphasis is being laid on the wrong quarter by designing special buildings The characteristics of the tenant rather than his house seem to be the vital factor, and Dr. Chalmers would like to see the establishment of clinics for the study of social biology to be resorted to in cases of repeated failure to respond to educative supervision Experience in Glasgow shows that about 20 to 25 per cent. of the occupants of cleared areas do not accept the houses offered them, while of the remainder who do accept the high proportion of 90 per cent. or more respond to the improved environment. It thus appears that the process of rehousing tenants displaced from slum areas is acting as a highly encouraging social filter

Sir John Mann, who adds a note to the pamphlet, describes three types of corporation houses recently erected in Glasgow: (*a*) normal houses for selected tenants at rents from about 13*s* 9*d* to 23*s* 2*d* a week; (*b*) intermediate houses, also for selected tenants moved from overcrowded houses, not necessarily in slum areas, at rents from about 10*s* 6*d*. to 12*s*; (*c*) rehousing for unselected tenants dispossessed by clearance, at rents from about 6*s* 6*d* to 8*s*. 9*d*. a week, all including rates These rents are made possible only by grants of public money, and this involves the adoption of special methods of educative control and management. An instalment of the Octavia Hill method, under which all families in the rehousing schemes are visited by women sanitary officers and trained nurse inspectresses, has produced such excellent results that Sir John earnestly advocates the extension of employment of trained women to include letting of houses, collection of rents, and ordering of repairs, as under the full Octavia Hill system. He goes further, and suggests a linking up or combination of the duties of women house managers with those of health visitors and specially trained nurses, the objects of rehousing being not only the improvement of health, but of conduct As he rightly says, in the case of slum-dwellers "habits are of greater importance than habitations, conduct more crucial than cash" And there is little doubt that the most potent influence in turning bad tenants into good citizens is an efficient and sympathetic house manager.

THE CANCER PROBLEM TO-DAY

IN his report on the State of the Public Health Sir George Newman gives a brief but illuminating account of the present state of the cancer problem, which should interest especially those concerned with the clinical aspects of this question. He points out that the function of his department is to remain in constant touch with the progress made in cancer research and to take advantage of any advance or opportunity for effective cooperation of the public health service in the prevention or treatment of cancer, and this account shows how closely recent developments in the study of cancer are being followed It, is pointed out how the experimental study of carcinogenesis has enlarged the notion of a uniform "cause" of cancer embracing all organs with the recognition of the importance of abnormal conditions preceding the development of cancer and differing widely for different organs of the body While we may still suppose that the intimate cellular changes responsible for the development of cancer are fundamentally the same for all tissues and all malignant tumours—and it appears, from the recent work of Kennaway, Cook, and their collaborators, that the essential in these changes is the production of abnormal cell metabolites—we must also bear in mind that such an abnormal cell metabolism can be induced by a great variety of agencies From this wider point of view therefore each organ may be said to have its own pathogenesis of cancer This conception introduces the possibility of regarding cancer within limits as a preventable disease Further progress along such lines demands a detailed study for each organ of the abnormal conditions preceding cancer in man This opens up a wide field for clinical research, and Sir George Newman foresees a fruitful development along such lines He has therefore little difficulty in disposing of what he calls "the growing discontent with what seems to be regarded as the negative character of the results of laboratory investigations for the solution of the cancer problem" In these hurried times there is a growing tendency to offer as a solution of a complex pathological problem some facile generalisation which can be readily understood, and if this can be expressed in the form of a striking slogan, it is readily accepted, no matter how wrong the premises are on which it is based Even to day the belief that cancer is a disease of civilisation is still widely held, although it has been disproved over and over again The criticism mentioned by Sir George Newman amounts to little more than a feeling of disappointment that the scientific investigation of cancer has rejected these generalisations, and has instead revealed a problem so complex as to make the study of cancer an independent discipline demanding a close study over many years It may be hoped that Sir George Newman's just reproof and his advice for coöperation will make for a closer contact between the clinician and the laboratory worker There is a vast amount of clinical material available which could thus be made to yield valuable results

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[1] Read before the Royal Philosophical Society of Glasgow, November, 1933, and printed by authority of the Committee on Housing of the Corporation of Glasgow.

[2] Municipal Housing Commission, 1904.

CHILDBIRTH IN HOLLAND

HOLLAND holds an enviable position among European nations in respect of maternal mortality In 1930 the maternal death rate for the Netherlands was 3 3, compared with 4 4 for England and Wales, 3 8 for Denmark and 3 0 for Sweden This, however, does not satisfy Dr J G Salomonson, head of the outdoor patients' department of the obstetrical and gynæcological university clinics, Amsterdam He finds[1] that practically no improvement has taken place in recent years either in the proportion of deaths due to puerperal sepsis or in the percentage of still births and in such matters he regards failure to progress as a sign of retrogression While admitting that even the most perfect care cannot prevent certain causes of stillbirth, he maintains that the majority of causes, such as syphilis and other chronic infections, toxæmias of pregnancy, malpresentations, prolapse of the cord, difficulties in the last stage of labour, and excessive exertion on the part of the pregnant woman, should be capable of improvement by an efficient system of antenatal supervision, which he regards as essential And he sees no reason why a final stage in antenatal care should ever be arrived at since, in such things, "human initiative is unlimited" The best equipment is useless unless it is taken advantage of, and in Holland a continual effort is made to induce a mental attitude both in men and women which will lead to a practical appreciation of antenatal supervision Having convinced them of the results obtainable by early control of pregnancy, provision must be made for bringing the necessary advice and assistance within the reach of every woman in every part of the country, irrespective of financial and other circumstances To give the mother the best possible conditions for her confinement and lying in period is also to apply the benefits of antenatal care to the unborn child A statistical table for Amsterdam and for the Netherlands as a whole for the years 1932 and 1933 proves that 44 per cent of infant deaths in the first year occurred in the first week, and more than 50 per cent in the first two weeks of life, and Dr Salomonson draws the conclusion that unless so called antenatal care is to be extended until two weeks after birth the trouble, so far as the child is concerned, will have been largely in vain

There has been a marked increase, during the last 15 or 20 years in the proportion of births attended by doctors in comparison with those attended by midwives only, but this is largely explained by a growing tendency on the part of patients to go into hospital for confinement The midwife still holds a predominant place in cases delivered in the homes Midwifery is a strictly regulated profession in Holland There are three training schools in the country—in Amsterdam, Heerlen and Rotterdam—and only about forty midwives between the three schools are allowed to take a certificate in each year Demands for training being in excess of the numbers required, candidates are obliged to take a competitive examination and to remain three years at the training school, and they are expected to attend refresher courses at stated periods A general decrease in the birth rate throughout the country, has reduced the amount of teaching material and no woman is accepted for training unless she intends to follow midwifery as a profession The midwife's sphere is limited to attention on normal cases at the first sign of abnormality during pregnancy she must consult a general practitioner, who will in his turn call in a specialist for complications of any importance, specialist service being available for every patient, however poor The midwife may not have a patient removed to hospital on her own initiative nor may she use any obstetric instrument Regulations introduced last year allow her to inject pituitary extracts in certain conditions, and if necessary ergot when the after birth has been expelled During the lying in period the midwife merely supervises her patient the nursing being undertaken by the "kraamverzorgster" or the "baker" A kraamverzorgster receives six months' training at the midwives school followed by 18 months district service under supervision, and she is qualified to carry out routine nursing of the mother and general care of the child The baker takes a practical and theoretical course lasting one year including instruction in cooking and housework She is in fact an efficient home-help who is capable of some home nursing, though she is not a qualified maternity nurse.

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[1] Recorded in a speech delivered with graphic illustration on the occasion of a visit of the British Gynæcological Visiting Society to Amsterdam Jour Obst and Gyn Brit Emp August 1934 p 553

Obstetrical training of medical students is treated seriously in Holland, beginning in the fourth year and being continued uninterruptedly for three years. The rule that a minimum number of cases, usually 20 simple and 2 complicated, must be personally attended, under supervision if necessary, is rigidly enforced The Amsterdam clinics carry on routine control of pregnant women from the fourth month onwards, a measure valuable both to patients and students. The occurrence of convulsions among the women under supervision is practically unknown, and cases of malpresentation or failed forceps are very rare Certain districts have no resident doctor or midwife, because they are unable to make a living there, but even in these areas assistance can be procured at short notice, and speaking generally the midwifery service is widely distributed over the whole country.

HYPERTENSION DUE TO SUPRARENAL TUMOUR

The second of Prof de Wesselow's Croonian lectures, which we published last week, contains an excellent account of the remarkable symptoms caused by paraganglioma of the suprarenal or accessory chromaffin tissue Three cases of this kind in which there were paroxysmal attacks of hypertension have been summarised in our columns within the past year,[1] and records of 60 have lately been collected by A E Belt and T O. Powell[2] From all this evidence there can now be no doubt of the character of the tumours ; the cells give the chromaffin reaction and the Vulpian reaction for adrenaline, and the symptoms are typical of excessive discharge of that substance Usually the characteristic attacks of hyperpiesis are at first acute and transient The blood pressure between them is sometimes normal and sometimes raised , sometimes indeed it remains permanently high, and acute attacks are absent. The paroxysms are associated with other symptoms, such as cramps in the limbs, colicky or anginal pain, mydriasis, dyspnœa, pallor, headache, and sweating. The rise of blood pressure is also accompanied by a rise in the blood-sugar, with glycosuria, and transient albuminuria may follow. Retinal or cerebral hæmorrhage may result from the rise of pressure, or (as happened in the case reported by Belt and Powell, in which a cystic tumour weighing 1000 g was present) there may be left ventricular failure with death from pulmonary œdema J. Bauer and R. Leriche,[3] who report a striking example, emphasise the diagnostic importance of the parallel ascent of the blood pressure and blood-sugar curves, and of the fact that the diastolic pressure, in characteristic cases, does not rise during the hypertensive paroxysms These two points may be very useful in differentiating the attacks from hypertensive crises due to other causes.

Prof de Wesselow is careful to point out that there is so far no adequate evidence that excessive secretion of adrenaline is responsible for the production of "essential hypertension," and that the "emergency" view of adrenal medullary function is opposed to such a theory. Several cases are on record in which adrenalectomy has been performed for the relief of essential hypertension with good results ; for instance, Monier-Vinard and Desmarest[4] have lately published one, followed for five years, in which considerable benefit followed removal of a suprarenal gland In some at least, however, a chromaffin tumour has been present, as in two of a series of six described by C and J L De Courcy,[5] and it is doubtful whether these should be classified as essential hypertension The pathological appearances in cases of hypertension due to paraganglioma are closely similar to those found in essential hypertension, and de Wesselow discusses the question whether the latter is due to a humoral factor with a pressor action But he makes it clear that adrenaline is not necessarily the pressor body to which attention should be directed

GROUP PRACTICE v. THE FAMILY DOCTOR

Since the Committee on the Costs of Medical Care issued its report nearly two years ago,[6] the merits and demerits of group practice have been much discussed in America, where the development of specialisation, and particularly the increased use of laboratory services, has made the treatment of a patient in many cases a matter not so much for an individual practitioner as for a number of practitioners *each possessing some special skill and experience*—a matter in short of "team work" But an effective team is something more than a chance collection of individuals , it is a unified organisation of workers who are known to each other, who are familiar with each other's methods, and whose work is coordinated to attain a definite result. Group practice as recommended in the majority report of the Committee on the Costs of Medical Care is practice carried on by "a group so organised that each professional person in it is responsible to the group for the quality of his work rather than solely to himself." Group practice does not necessarily involve group payment, whether by periodical contributions on an insurance basis, or out of funds raised by local or central taxation The group practice clinics that have been established in California and the Middle West provide medical services which are in many cases paid for on a fee-for-attendance basis, while on the other hand in the British scheme, though payment is made on an insurance basis, the services are provided by individual practitioners working as independent units But the British scheme, which is far more elastic than is generally realised, makes provision also for group practice The employees of the Great Western Railway Company at Swindon are permitted by the local insurance committee to make their own arrangements for obtaining medical treatment, and they obtain it through the G W R Medical Fund Society, which receives from the committee the money that would otherwise have been paid in providing treatment under the panel system Treatment is provided by the medical staff of the Society, which is an organised group of 13 doctors, including specialists and dental surgeons.

In America the discussion roused by the publications of the Committee on the Costs of Medical Care have mainly concentrated on group payment—the provision of medical services on an insurance basis, but from the professional point of view the problems of group practice seem of much greater significance. Hitherto, medical practice, whether under a health insurance scheme or in private, has very generally been conducted, apart from institutions, by individual practitioners working as independent economic units and responsible solely to their patients. The majority of the Committee on the Costs of Medical Care propose to substitute for the independent practitioner a group of practitioners responsible to the group, which will in practice mean to a group chief Can such a system be harmonised with the unique relation, sympathetic and confidential between doctor and patient, and the venerable traditions associated with the term "family doctor" ? The question has recently been discussed[1] with great ability by Dr Harry C Saltzstein and Dr Channing Frothingham Dr Saltzstein takes a hopeful view of group practice, in which he thinks the family doctor can and should be the central figure, doing the bulk of the medical work He is impressed by the efficiency of organised team work, and by the economies that it can secure, and he concludes that "the efficiencies and economies of grouping are bound to win out in the long run, for whatever is best for the American people will, in the long run, be best for the physicians who serve them" Dr Frothingham takes another view He thinks group practice by a combination of general practitioners and specialists will weaken the position of the family doctor, who will tend to refer to other members of the group work that he should do himself, and will therefore gradually lose in efficiency He concludes that the way of securing the best medical care is for each individual to have a family doctor to whom all medical problems should first be referred, and who should "be supplied with a complete hospital to which he may refer such cases as need hospitalisation for one reason or another"

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[1] THE LANCET, 1933, ii , 1382 , 1934, i , 665; Sept. 15th, 1934, p. 630

[2] Surg , Gyn , and Obst , July, 1934 p 9

[3] Presse méd , Sept 5th, 1934, p 1385

[4] Bull. et mém Soc méd hôp de Paris, July 9th, 1934, p 1116

[5] Amer Jour Surg , August, 1934, p 324.

[6] See THE LANCET, 1933, i , 29, 47

A JUBILEE OF BRAIN SURGERY

SOME time in the autumn of 1884 a farmer, aged 25 years, consulted Dr Hughes Bennett about weakness of his left arm Four years before he had been struck on the left side of his head by a piece of timber, but took no harm from it with the exception of occasional headache, until a year later when the left side of his face and tongue began to twitch Slight at first, the twitching became paroxysmal and he had what he described as a fit, beginning with a sensation in the left side and culminating in general convulsion with loss of consciousness For two and a half years he continued thus without loss of general health, the twitchings occurring daily and the seizures about once a month About six months before Dr Bennett saw him he began to have spasmodic twitchings of the left hand and arm, alternating with twitchings of the face, the general convulsive seizures ceased and he first noticed weakness of the left hand which continued to increase until he was unable to use tools, and recently weakness of the left leg had led to a limp On examination Dr Bennett found double optic neuritis, more marked on the right side, but with normal vision There was complete paralysis of the left fingers and wrist, limited movement of the elbow, and impairment at the shoulder The left leg was weak and in walking the patient could not clear his toes from the ground Knee jerk and ankle-clonus were excessive on the left side, sensibility was normal and there was no muscular wasting While under observation the patient suffered from lancinating pain in the head with frequent attacks of uncontrollable vomiting The twitchings which occurred many times a day began in the left fingers and thumb occasionally in the face never in the leg Dr Bennett deduced the presence of a tumour in the cortical substance, probably of limited size and situated in the neighbourhood of the fissure of Rolando The patient's sufferings having become intolerable, he cheerfully consented to any procedure which offered prospect of relief, and on Nov 25th 1884 at the Hospital for Epilepsy and Paralysis (then at Portland-terrace, Regent's Park), Mr Rickman Godlee trephined the skull and removed a triangular piece of bone over the Rolandic fissure On division of the dura no tumour was visible but the ascending frontal convolution seemed somewhat distended On making an incision into the grey matter a hard glioma about the size of a walnut was found a quarter of an inch below the surface and was easily enucleated Hæmorrhage was arrested by a galvanocautery

The account of this case has been taken from the "Mirror of Hospital Practice" in THE LANCET of Dec 20th 1884 It is believed to have been the first operation for the removal of a cerebral tumour and the medical committee of the hospital are proposing to celebrate the jubilee of the operation by a commemoration dinner and a paper to be read by Mr Wilfred Trotter at the Royal Society of Medicine.

BRUCELLA INFECTION IN PIGS

IN a letter appearing in our issue of Jan 13th, 1934 Mr A H Quin drew attention to the frequency in the United States of America of undulant fever, due to the porcine type of *Brucella abortus* Numerous observations have shown that this type of infection is comparatively common in the hog raising districts and meat packing centres of the middle west, and epidemiological inquiry has left no doubt that it is transmitted almost exclusively by contact, being confined to those who deal with infected sows or their carcasses In the remaining areas of the United States undulant fever seems to be due very largely to the bovine type of bacillus Consideration of some of the puzzling features in the ætiology of undulant fever in this country and in other parts of Europe, such as the high incidence of contagious abortion in cattle and the relatively low incidence of undulant fever in man, has led certain members of both the medical and veterinary professions to doubt whether the bovine *abortus* bacillus is capable of causing disease in man at all They suggest that undulant fever is due to the more virulent porcine type and they are prepared to exonerate the cow completely Happily there is enough exact information available to answer questions of this kind Not only in this country, but in almost every country of Europe where careful typing of the strains isolated from undulant fever patients has been carried out, the bovine type of bacillus has been found, except in areas where goats and sheep infected with *Br melitensis* are present In many countries, including France and Great Britain, the porcine type has not yet been encountered, even in pigs, in spite of its being carefully looked for, while in other countries such as Denmark and Germany, the number of recognised foci of brucella infection in pigs is negligible compared with the number of those in cattle Nevertheless the experience of America must put us on our guard against the porcine disease Working in the Ministry of Agriculture laboratory at Weybridge, Mr T M Doyle[1] has recently tested by agglutination no fewer than 10,474 sera from sows in different parts of Great Britain and Ireland Of the total number, 4 agglutinated at 1/25 17 at 1/50 and 4 at 1/100 Reactions at 1/100 are generally regarded as evidence of infection and Doyle sees no reason for modifying this interpretation in his own series Any pronouncement, however, on the definite existence of brucella infection of pigs in this country must await the actual isolation of the porcine type of bacillus from home-bred animals

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[1] New England Jour Med 1934 ccxi 337, 443

[1] Jour Comp Path and Therap June 1934 p 131

RED CROSS AEROPLANES

ALTHOUGH air ambulances have fully proved their value the Royal Air Force has as yet no machines designed exclusively for the transport of wounded In Iraq and elsewhere casualties are regularly carried by air, but general service aeroplanes fitted with stretchers are used for the purpose In time of war it is unlikely that aircraft of this kind could be spared from combatant activities, and the British Red Cross Society has decided to do its part in filling what might be a serious gap by forming a nucleus of air ambulances comparable to the nucleus of motor convoys it provided at the beginning of the late war Colonel E M Cowell, F R C.S., told the United Services section of the Royal Society of Medicine last December that the Air Ministry had sanctioned the scheme and that several flying clubs had expressed interest in it. He has now been able to give a definite demonstration of its value, and in cooperation with the War Office and the Royal Army Medical Corps, the British Red Cross Society had an air ambulance detachment in action during the recent manœuvres in the Colchester area The *Daily Telegraph* (Sept 18th) reporting the test states that Flight-Lieut. H M. Schofield, an assistant county director for the Society, organised the establishment of an "air collecting station" (advance dressing station) and the equipment of the aircraft. This was a standard S T 10 Monospar monoplane with a special stretcher platform, a detachable forward walkway, and a detachable door. The air ambulance detachment included a pilot, a ground engineer, and a mechanic In less than two minutes one lying and two sitting casualties were loaded into the machine and the first return trip over a distance of 24 miles occupied 21 minutes from the time of taking-off to the return landing, including disembarkation of the patients. Colonel Cowell informs us that although only one or two ambulance aeroplanes are at present available, the British Red Cross Society has the names of a dozen volunteer B-pilots, all of them qualified in first-aid and trained in transporting casualties The suggestion he made to the Royal Society of Medicine was that such machines might in time of war be manned by women and pilots too old for fighting.

"LES SCRUPULEUX"

IN his brief autobiography[1] Dean Inge discusses troubles that plagued him at one period of his life, troubles described as "a kind of rationalized psychalgia" and "a legion of devils waiting for me in my unoccupied moments" These he accounts as humiliating weaknesses and his object in divulging them is to give the benefit of his experience to his readers, for he believes that he has many fellow-sufferers His aim will justify us in piecing together the parts of his story and seeking their connexion with each other. He relates how his three chief friends and rivals at Eton, like himself, suffered from depression or dejection and two of them found the torment more than they could bear, the sad end of Hugh Macnaghten being within the memory of some of us. In all we find the combination of high ideals, an urge to work "fiercely," and symptoms capable of becoming unbearable The Dean himself came through to happiness and success, but the life story of the others points the moral that this combination contains within itself something potent for disaster.

There is no difficulty in placing the case-histories in Janet's well-known group. The intellectual intensely scrupulous man with a tremendous inner drive to work and, unsuspected by the world, a host of tormenting symptoms, justifies the saying that the best work of the world is done by neurotic people. The condition is recognised in many cases of nervous breakdown, when the timely advice of a knowledgeable physician may lead to a lowering of the tension and a slackening of the effort towards an impossible ideal. Dean Inge rightly stresses the need for talking out the troubles with another, though we may doubt whether this in itself is curative in such a serious condition. When tragedy occurs there is invariably a ready explanation of cause and effect which arrests inquiry and understanding. The Dean quotes, and appears to accept as an explanation generally valid, Macnaghten's view: "The fact is, my dear Inge, you and I both worked much too hard here and at Cambridge. I have never recovered from it." One need watch our newspapers for only a short time to see a report of an inquest at which friends of the deceased describe his keenness, his scrupulousness, his hard work—often undertaken without necessity—and the absence of domestic or financial worry, the conclusion being too easily accepted that the hard work was a cause of all his trouble.

As Dean Inge notes, a natural pride and reticence make it odious to divulge humiliating weaknesses, and in that admission he indicates the relentless judgment of oneself that takes its place amongst the other symptoms and makes the sufferer hide his state from his dearest friends; but in most of these reported cases the psycho-pathologist, reading between the lines, can imagine what the man's true symptoms might have been Dean Inge's courage should help some sufferers to realise that they are not alone in their difficulties; it has certainly provided at first hand a most useful fragment of clinical material.

The Marquess of Linlithgow has been appointed a member of the Medical Research Council and will succeed Lord D'Abernon as chairman He is president of the Edinburgh and East of Scotland College of Agriculture and was chairman of the Royal Commission on Indian Agriculture (1926–28) He is at present chairman of the Joint Select Committee on Indian Constitutional Reform

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WATER-SUPPLIES AND THE DROUGHT.—At a meeting of the Water Supplies Emergency Conference held on Tuesday it was reported that recent rainfall had improved supplies in a number of areas, but that economy in consumption was still needed The general rainfall over England and Wales during August was 3 18 inches, compared with a normal of 3 35 Over large areas, covering most of the northern Midlands and Cheshire and parts of the eastern counties, the deficiency was more than 30 per cent. and at some places in the West Riding of Yorkshire amounted to more than 60 per cent On the other hand, a substantial excess had occurred in parts of Wales and the south and south-west of England. Rainfall during the first three weeks of September was less than normal, apart from local thunderstorms For some weeks the Metropolitan Water Board was able to abstract more water from the Thames and to increase the amount of water in storage, but last week it had again become necessary to draw on reserves Sixteen of the larger water undertakings report present shortage in their supplies. All of them have measures (ten by using the Emergency Water Shortage Act) for additional supplies or for economies in consumption Thirty-two smaller urban authorities report serious shortage, and of these 29 have schemes for new supplies in hand or alternative sources available and three are relying on economies.

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[1] Vale By the Very Rev William Ralph Inge, K C.V.O., D D., Dean of St Paul's, 1911–1934 London Longmans, Green and Co 1934 Pp 127. 3*s* 6*d*

PROGNOSIS

A Series of Signed Articles contributed by invitation

XX —THE PROGNOSIS OF ORTHOSTATIC ALBUMINURIA

ALBUMIN is present not infrequently in the urine of adolescents and young adults who are otherwise apparently perfectly healthy In schoolboys of 12 to 18 the incidence is about 10 per cent, though some observers give a figure as high as 16 per cent The incidence is higher in evening than in morning specimens, and W Collier and others have shown that it is practically 100 per cent in members of crews and football teams after severe exercise In many individuals it is a transient condition only, with no recurrence perhaps for days or weeks, and in only a small proportion is the albuminuria strictly orthostatic—that is to say, regularly present during the day and absent during the night

Although many names have been given to this form of albuminuria such as physiological, alimentary or digestive, cyclic or intermittent, lordotic or postural, it is difficult to draw sharp lines of distinction between them People with dyspeptic symptoms or with marked lordotic curves are no more often affected than others, and the fact seems to be that severe and protracted muscular effort will cause albuminuria in anyone, but that the amount of effort needed to produce this effect varies in different individuals Functional or benign seems a better descriptive term

Although functional albuminuria was described as long ago as 1841 and Sir William Gull wrote about it in 1873, it attracted little attention at first All albuminuries were regarded with suspicion by insurance companies and physicians generally The former accepted them, if at all, in consideration of an increased premium, and the latter kept them away from school, or hedged about their lives with many *restrictions in diet and exercise*

In the early part of this century, however, as the result of the observations of Clement Dukes at Rugby and of others, a great deal of interest began to be taken in the subject Physicians generally, and school doctors in particular, began to doubt the necessity and wisdom of these restrictions In 1910 a discussion was held at the Royal Society of Medicine The conclusions arrived at were well summed up by Sir James Goodhart who said, at the end of the discussion, "functional albuminuria has no sinister effect on health and no evil significance as regards life" More recent observations since that date have confirmed this view H H Bashford in 1926 published an analysis of the after history of boys with albuminuria who entered the Civil Service at the age of 14 He concluded that albuminuria is "consistent with the prospects of a perfectly normal life of physical efficiency" Jervell in Norway in 1928 and Palmer of Boston in 1931 and many others have published articles expressing similar views The general experience of school doctors, who see many of these cases, is the same

Boys who enter a public school with functional albuminuria show no more tendency than others to illness during their school time and these cases seem to do just as well now, with no restrictions in diet and exercise, as they did 30 years ago when such treatment was in vogue. It is difficult to follow up their history in after life but school records seem to show no undue mortality amongst them, and many who had albuminuria off and on during the whole of their public school life are known to be, 25 or 30 years later, doing hard and strenuous work

DIFFERENTIAL DIAGNOSIS

It is safe, therefore, to assume that the prognosis of functional albuminuria is uniformly good, if the individual is healthy in all other respects The real importance lies in diagnosis, for it is almost as great a calamity to a healthy boy to be prevented living an ordinary life like his fellows, as it would be to an unhealthy one were his disease neglected until *unequivocal signs of its presence manifested themselves* The diagnosis may be difficult when the number of boys to be dealt with is large, as it must be made by a process of exclusion, and negative findings are always a source of anxiety

In all but the exceptional case the diagnosis can be made from the medical history, clinical examination, and the testing of a series of morning and evening samples for two or three days If there is nothing suspicious in the medical history and clinical examination, and the albuminuria is intermittent, its functional origin can be assumed with reasonable confidence

In eliciting the past history, special attention must be paid to recent illnesses, particularly to *epidemic diseases and throat affections* The clinical examination must be complete and must exclude all signs of visceral disease and hyperpiesia

The samples should be obtained when the patient rises in the morning and goes to bed at night The innocent character of the albuminuria may be obvious at once, *for all the samples may be clear*, showing that the condition is a transient one only. This often happens in boys, at any rate, and may be due perhaps to spermatic fluid, strenuous exercise, or some other accidental cause Albumin may be present in the evening samples only, or be found in every specimen and persist for several days, needing, possibly, a day *or two in bed before a clear sample is obtained and the* intermissions are revealed Occasionally large quantities of albumin are present and as much as 10 parts per 1000 in some samples is not incompatible with a functional origin, provided other samples are clear

Formerly, considerable stress was laid upon the *presence or absence of casts. It is known now that* some hyaline casts and some red and white corpuscles may be present in functional cases and their presence does not always indicate organic disease. Addis has devised *a method* of counting each of these elements, expressing the result as the rate of excretion per 12 hour period, and he draws a line at an arbitrary figure between functional and organic cases

When something in the past or family history or clinical examination points to organic disease, bacteriological investigation and, rarely, or renal-tolerance tests may have to be employed. Without them early renal tuberculosis or renal calculus may conceivably be missed. For example, a boy with slight intermittent albuminuria, whose father had functional albuminuria when at school, [illegible] almost to be a [illegible] diagnosis [illegible] nately, a [illegible] led to [illegible] examination of the [illegible] and the [illegible] tubercle bacilli were found in [illegible]

For all general purposes, however, [illegible] assumed that albuminuria is functional [illegible] if there is nothing in the past history and clinical examination against it, and if the albuminuria is intermittent in character.

THE DESIRABILITY OF KEEPING RECORDS

All the facts should be explained clearly to the patient and his friends, and careful records should be kept In this way much anxiety and trouble can be avoided if the condition is observed in some future illness If the patient becomes a candidate for insurance or for one of the services, he can be told that he will, if he is wise, go to his medical examination without his breakfast and in a taxicab.

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SPECIAL ARTICLES

A MIDWIFE AS A CARRIER OF INFECTION

By F. Garland Collins, M R C S Eng, D P.H
MEDICAL OFFICER OF HEALTH FOR THE COUNTY BOROUGH OF WEST HAM

Midwife A shared a private practice with another midwife in one of the overcrowded poorer districts of this borough Their standard has always been high, but during the last two years Midwife A has reported slight pyrexia during the puerperium in several of her cases Investigation in each case revealed no source of infection, and after disinfection of her instruments and herself she was allowed to resume duty.

In October, 1932, Mrs K, who was delivered and nursed by Midwife A, developed acute double mastitis for which she had constant treatment until discharged as cured in December, 1932 Following this the midwife developed a septic finger and septic throat She also reported to the inspector of midwives that she had, at irregular intervals, an irritating skin rash on both forearms A skin specialist to whom she was sent for an opinion regarded the rash as non-infective, she was accordingly allowed to resume duty after disinfection and a period of rest. From March to June, 1933, she attended 16 patients, all normal cases of whom one only had a rise of temperature during the puerperium Midwife A complained of a slight recurrence of the rash in May and June

On June 19th, 1933, Mrs F was delivered by forceps, and for the first six days of the puerperium she had symptoms of a mild puerperal infection, but made a complete recovery At this period the midwife had no rash, but she noticed intermittently "spots on her tonsils" From June to September she conducted only five deliveries, attending also a case of complete abortion Each of these cases developed a rise of temperature and increased pulse-rate over a period of some days during the puerperium, one of these cases died of puerperal sepsis six weeks after confinement In the abortion case the midwife undertook the nursing (having no midwifery cases to attend at this particular time) and on the third evening the patient developed a temperature of 104° F with a very septic throat Unfortunately no swab was taken of this throat, but in view of the subsequent history it may be assumed that the patient was infected by the midwife.

Since September, 1933, Midwife A has ceased her work as a midwife Throat swabs taken on Sept 14th and 29th revealed streptococci, staphylococci, and *M. catarrhalis* A virulence test proved the streptococci to be non-hæmolytic, the bacteriologist stating on his report · "I do not think these streptococci can be regarded as virulent or the cause of the rise of temperature in her cases" Pneumococci were not found in these swabs At this time the midwife complained of inertia, persistent backache, and recurrent infection of her tonsils, which appeared to be of the small buried type; her teeth had been attended to recently and were in good condition. Examination of her urine revealed slight albuminuria with some leucocytes and epithelial cells; culture showed *B coli* only.

In view of her general ill-health she was referred by her doctor to a physician at one of the London voluntary hospitals, who found that she had tonsillar infection with a large crypt in her right tonsil, this was swabbed, the swab revealing a severe infection with pneumococcus Type 1 While the examinations were being conducted on Midwife A, who was then an in-patient in one of the general medical wards, at least 16 of the patients in the ward developed sore-throats, all proved to be infected with pneumococcus Type 1 A child suffering from endocarditis in the next bed to the midwife developed pneumonia Midwife A was then isolated and tonsillectomy performed She remained in isolation until her discharge in January, 1934, but in spite of treatment throat swabs continued to reveal severe infection with pneumococcus Type 1 Unfortunately each of the six cases of puerperal pyrexia nursed by Midwife A between June and September, 1933 though urged to do so, failed to attend for examination and swabbing of the cervix, which it was thought might have revealed, even at so late a date after delivery, the presence of pneumococci

The midwife has been debarred from carrying on her practice, or indeed from undertaking nursing in any form Throat swabs taken recently still reveal on culture a pure growth of pneumococci from which an autogenous vaccine has been prepared for treatment As regards her general health, she is at present decidedly better, apart from an indefinite and intermittent rash on her arms Her throat shows scarring but nothing to suggest such an infection with pneumococci as we know to exist

There is no doubt that this midwife is a carrier of a virulent strain of pneumococcus, and this probably accounts for the persistent sepsis of varying degrees in her practice, an infection puzzling alike to the midwife and to her supervisor over a considerable period This gives support to the suggestion that in every case of puerperal pyrexia all those in attendance on the patient should have nasal, oral, and throat swabs examined, in order to rule out possible sources of infection This midwife appears well, and without the result of the throat swabs she might quite reasonably have been allowed to resume practice—with disastrous results amongst her patients. A considerable number of cases of puerperal sepsis, attributed to auto-infection, might on further and closer examination be proved to have become infected by a doctor or midwife acting unwittingly as carriers of virulent organisms without themselves showing signs of infection It would be logical to insist on periodical examination of all who are engaged in the practice of midwifery

I am indebted to Dr J W McNee, to Prof C C Okell, and to Dr Helen Campbell, supervisor of midwives in this borough, for help in preparing this report

BRITISH MEDICAL ASSOCIATION

MEETING IN BOURNEMOUTH

SECTION OF SURGERY

Prof G Grey Turner (Newcastle upon-Tyne) the president, was in the chair when Mr Geoffrey Jefferson (Manchester) opened a discussion on

Arterial Embolectomy

Embolus of a large artery, he said, was a grave emergency, and the ideal treatment was immediate removal of the clot and suture of the vessel This procedure restored the circulation and averted gangrene The work of Carrel and others had paved the way for embolectomy, which had first been successfully performed by Labey in 1911 Mr Jefferson had collected 73 cases from the literature in 1925, and since then the numbers had increased prodigiously He now reported five new personal cases One case was a failure and exemplified the disadvantages of spinal anæsthesia infiltration was preferable for limb cases, as the surgeon could then observe the effects of the operation on pain and mobility The distal embolisms were the most serious

The clinical history was remarkably constant, and diagnosis was not difficult Everything depended on the prompt action of the general practitioner, who had from four to ten hours only in which to decide on embolectomy Most of the patients had heart disease with myocardial damage They showed pain, pallor, paralysis, and absence of pulsation in the limb involved The pain was pitiable and was enough answer to those who said that embolisms were best left alone The mechanism of its production was obscure Cutaneous anæsthesia was found, and its distribution was vascular rather than nervous There was also muscular paralysis The embolism was easily localised, it usually lodged at a bifurcation Symptoms might appear with dramatic suddenness or from small beginnings paræsthesias, moderate pain, and pale blotching If necessary, help might be obtained from an arteriogram The artery should be opened as soon as possible, it was most important for practitioners to realise that they must not argue by analogy from other forms of gangrene Failures were due to the presence of more than one embolus The patient's own sensations were the best guide in estimating success of operation Spontaneous recovery had been known, it was probably due to the passage of a riding embolus at a bifurcation from the main vessel into a subsidiary one Perhaps in future cases the surgeon might be able to milk the embolus into a small vessel instead of opening the artery

Dr Max Danzis (Newark, U S A) spoke of the great increase in number of these operations in America, and said that patients were being diagnosed and operated on earlier In a series of cases followed up 41 per cent showed immediate post-operative success but 13 patients had died later from secondary circulatory emboli Dr Danzis quoted a case of his own, and debated the problem of second operations In his latest group of 48 cases the operative recovery-rate was 30 per cent, but 87 per cent of the non-operated cases died He appealed for a standard of operability for the severely ill type of case, and a consideration of the desirability of operating repeatedly in cases of recurrent emboli Each intervention made a subsequent one more difficult, and in a certain number of recurrent cases expectant treatment might be justifiable Local anæsthesia was best, spinal should only be used when unavoidable

Dr G J Langley (Manchester) reviewed a series of cases, some of which had been operated on by Mr Jefferson The thrombi were supposed to originate in the auricle, their formation being associated with auricular fibrillation, but Dr Langley in his cases had failed to find the auricular clot A mass of fungating vegetations on the auriculo-ventricular valves also might easily be the source of an embolus Endocarditis of one cusp of the aortic valve and infarction of the heart might be further sources There might be widespread clot in the body without any embolus formation

Mr E F Finch (Sheffield) related his own experiences He emphasised that improvement in colour of the limb did not prove circulation through the main artery The significance of this had been brought home to him by a recent case of brachial embolus after an accident He had pulled the embolus down from below and then waited Collateral circulation had been established and pain relieved in about five minutes Mr Finch had then tied the brachial artery The result had been perfectly satisfactory A similar case had occurred next day and another surgeon had removed the embolus in the same way There had, however, been no establishment of collateral circulation and the patient had died Ligaturing the artery might prevent secondary thrombosis at the same site

Mr G E Larks (Plymouth) described four cases of his own, in three of which arteriotomy had been impracticable One axillary embolus had been operated on with complete success within five hours under local anæsthesia The man had since undergone three operations without further embolism In the second case the patient had been gravely ill and autopsy had revealed the source in an atheromatous aortic plaque Two others had been seen too late Embolism had been diagnosed almost immediately in the first but the surgeon had not been called in Amputation, multiple embolism and death had followed The second patient had managed to displace his clot into an unimportant vessel by rubbing These emboli fell into two groups post-operative and cardiac In the first group results were good, it was the cardiac cases that needed surgery The clot tended to occur in cases under treatment at the time when normal rhythm was restored, so there was every hope of increasing the number of cases saved by surgery The best way of localising the clot was to find the point where pulsation ceased. If a case was seen by the surgeon just too late, what should he do ? Should he await gangrene, attempt embolectomy, or divide the artery completely ?

Mr A G Banks (Ipswich) recounted the case on which he had operated embolism in the right arm following operation for double hydrocele The arteriotomy had proved perfectly simple and successful He contrasted this case with another which had not been operated on and in which there had been the most agonising pain which even morphia could not control

Dr Bergstrom said that many cases had been done in Sweden He himself had operated on seven or eight with three successes

Mr E M Cowell (Croydon) described cases he had encountered on the battlefield In one case of gunshot wound of the thigh he had milked out a tremendous amount of red clot from the femoral artery after removing an embolus, and the collateral circulation had established itself before the main vessel had clotted up again. He thought it important to milk the artery and not merely to remove the presenting embolus.

Mr. L. O'SHAUGHNESSY admitted he had failed to recognise his first case as a surgical emergency and had awaited the onset of gangrene. He described a case of abdominal embolism associated with suppression of urine; operation had not been considered, but he thought it might well have been. Surgically the distinction between embolus and thrombus was not significant. The surgeon should always be given the chance of deciding whether operation were practicable or not

Prof. A. W. SHEEN (Cardiff) recalled a war case in a tertiary syphilitic in whom he had opened both femoral arteries and pulled out yards of clot. He thought there would have been more gangrene if the arteriotomy had not been done.

Mr. ROCK CARLING (London) stressed the importance of early diagnosis. All his cases, like all Mr. Jefferson's, had been sent to him by one physician. The onset was so dramatic as hardly to be overlooked by a competent nurse. Extension of clotting above and below took time and the surgeon should get the case before it occurred In doubt one should open below the embolus. He was not sure that there were any "unimportant" arteries; gangrene, he thought, resulted from blockage or spasm of arterioles and many of the symptoms were due to spasm The best way to control the circulation at operation was an elastic ligature or broad tape passed behind the vessel. No type of forceps or clamp was free from danger.

The CHAIRMAN confessed to a record of missed opportunities The condition was not rare, but was frequently overlooked until the time for successful intervention had passed.

The Septic Hand

Mr. R. KENNON (Liverpool) described his experiences in a special clinic for septic hands. Surgeons and nurses were very liable to septic conditions, and the horny hand of toil was the least susceptible. Maceration of tissues was an important factor. Most septic hands arose from punctured wounds The surface epithelium should be removed by a safety-razor blade to allow drainage and to show exactly where to make a second incision if necessary. Mechanical pressure of the nail often kept up cracks for weeks. A little cotton-wool pad and nail-trimming, round the crack only, would result in healing. If the nail had to be removed it was often well to remove the distal portion of the phalanx to free the suture line from tension. Squeezing for non-existent pus, plunging the hand into very hot water, and the use of strong antiseptics would convert a trivial injury into a serious one The fascia underwent necrosis and subsequent fibrosis Tender nail beds developing apart from the injured finger indicated to the surgeon that too hot dressings were being used. Phlegmon might be produced without any infection ever having been present Boils usually appeared on the back of the terminal phalanx. They required a splint and dry dressing The crucial incision must never be made under ethyl chloride. For paronychia the nail bed might have to be removed but must never be wrenched off. The most terrible condition was the streptococcal finger, from a small crack. Absolute rest on splints was the essential, and most cases cleared up in 24 hours, leaving only the involved glands. It was well to take off the epithelium at the point of puncture. The axillary and infraclavicular glands might cause a rigor, and if the rigor were repeated serum treatment must be applied. If pus formed there must be operation, but not otherwise. Incisions on fingers must always be on the lateral aspect. Maximal tenderness occurred at the heads of the metacarpal bones where the sheaths narrowed or ended. Pressure there would give the earliest possible diagnosis. There was a thenar, a middle and a small hypothenar palmar space where pus might collect. General anæsthetic, tourniquet, knowledge of these spaces, care of the median nerve, splints, and moist dressings were the cardinal points of treatment of septic finger. The part must not be allowed to become soft, and splints should be discarded as soon as possible or slight flexion on them allowed. Early movement was essential. Amputation should only be done if the tendon were dead or there were suppurative arthritis. The incision must not skirt the web and the protruding bone must be left in place if the hand were not to be crippled. The tendons could be pinned down in the rest position by a towel clip, and the ends then sutured over.

Mr. P. H. MITCHINER (London) condemned the tourniquet, which might cause severe sloughing Better results were obtained without splinting patients needed to be urged to use their hands. Stiff and painful fingers should not be preserved.

Mr COWELL deprecated the use of iodine for clear cuts; it coagulated blood, locked up germs, and destroyed tissues locally. Dressings of sterile gauze and vaseline every fourth or fifth day, the arm being put in plaster, saved a great deal of pain. Such infrequent dressing required courage but was a valuable point in technique.

Mr. H. W. S. WRIGHT (London) spoke of the dange of pieces of glass from catgut tubes; he had seen several infected hands result. Liquor alumini sub acetatis (Extra Pharmacopœia) was a very reliable dressing for all forms of sepsis; it relieved pain a well as a fomentation, and the dressing need only be moistened twice a day.

Dr. DANZIS recommended wide incisions under anæsthesia.

Dr. A. S. GOUGH (Watford) said a splint must be applied at once, or the patient would go on working He deprecated the use of wet dressings and oil-silk since moist tissues spread the infection further. A hygroscopic paste was useful, and movements should be started late rather than early.

The CHAIRMAN urged rest, local and general, and confinement to bed.

SECTION OF RADIOLOGY AND ELECTROTHERAPEUTICS

AT a meeting of this section, with Dr J H. DOUGLAS WEBSTER (London), the president, in the chair, a discussion on

Diagnostic Radiology of the Stomach and Duodenum

was opened by Dr S COCHRANE SHANKS (London) In describing the radiological appearances of the stomach and duodenum after operation, he said it was important to know before the examination the nature of the operation which had been performed The examination was difficult because, as a rule, it was not possible to fill out the stomach to its normal contour. Whilst in some cases the normal technique was sufficient it was frequently necessary to modify it Some form of mechanical compression was essential in order to control the efflux through the efferent loop and thus to distend the stomach or gastrectomy stump Screen examination and the demonstration of the mucosal relief pattern were of greater value and more important than in the case of the intact stomach Describing the normal radiological appearances after the various operations on the stomach Dr Shanks said that the stomach should be empty in 7 to 30 minutes if the stoma was of average size If the stoma was very large the flooding of the jejunum was exaggerated, and the stomach emptied into it in from two to three minutes Recurrent lesser curve ulcer was easily demonstrated if the stomach was reasonably well filled by controlling the efferent loop Recurrent duodenal ulcer presented a more difficult problem In some cases the actual ulcer crater could be seen, but more frequently only some general deformity of the duodenal bulb was present, the result of scarring changes It was difficult to demonstrate the niche in cases of gastro jejunal ulcer, and persistent localised tenderness and a persistent residue in the ulcer crater were the most important signs An ulcer situated in the region of the stoma might, by spasm or by scarring, cause stenosis of the stoma itself, with gastric stasis stenosis of the opening of the proximal loop, with the development of duodenal ileus if the pylorus was patent , or stenosis of the distal loop, again causing duodenal ileus, if the proximal was patent The demonstration of the crater in cases of jejunal ulcer was more likely to be successful The larger, the denser, and the more persistent a residue, the more likely it was to be an ulcer crater Localised tenderness was a valuable confirmatory sign If the ulcer was situated on the anterior or posterior wall, the valvulæ conniventes could be seen converging to and interrupted by the crater If a stoma was placed too high in the erect posture stasis of the gastric secretion in the pars pylorica might result Duodenal ileus might also result in a minor degree from a high stoma especially if a visceroptosis of some degree was present

Dr A E PAYNE (Leicester) said that in the pre-operative examination the chief questions which arose were (1) was a known ulcer healed or unhealed , 2) was a neoplasm present and what was its extent , nd (3) in both cases what were the outside connexions of the lesion It was essential to keep these questions in mind in the earlier examinations and especially to record the character and site of tenderness , the amount and position of any fixation , any suspicion of peristaltic discontinuity , or the presence or absence of an incisura or other spasm It was necessary to note the extent of any neoplastic involvement, especially as bearing on (1) the feasibility of operation, whether radical or palliative (2) the choice of operation in view of the particular portion of the stomach wall involved The value of the mucosal relief examination was emphasised particularly the method of graduated compression and aimed exposures as advocated by Berg and others The method was used to extend and confirm the screen findings by recording and displaying to better advantage what had been seen on the screen With intrinsic lesions the mucosal folds were interrupted and with extrinsic lesions the continuity of the folds was maintained With regard to the radiological determination of the healing of an ulcer, he maintained that it was rarely wise to express a definite opinion that an ulcer had completely healed The most valuable radiological signs were the disappearance of tenderness, which was indicative of healing and the disappearance of the niche The mucosal relief examination was not likely to contribute to the earlier detection of gastric neoplasm Few growths were missed with the present methods The majority of cases seen for the first time in the X ray department had reached a stage when they could hardly be missed This condition of affairs would not be remedied until, in every case of gastric symptoms beginning for the first time after the age of 35 and lasting more than ten days or a fortnight, a complete chemical and radiological examination was carried out

Dr G VILVANDRÉ (London) said that, although in a great majority of cases the complication of gastro-jejunostomy was an ulcer at or near the stoma, it did not necessarily follow that melæna was always the result of such an ulcer Cases should not be dismissed because no ulcer was found at the site of the gastro-enterostomy The lesion might be found in some other part of the gastro intestinal tract In addition to the investigation for ulcer it was important to determine the gastric emptying time This depended upon the size of the stoma and also its position in relation to the stomach A large proportion of gastro enterostomies were performed for chronic duodenal ulcer In many of these cases a pyloric stenosis with gastric dilatation was present In some cases it was found that the opening was at too high a level so that the stomach was not drained efficiently Such patients gave symptoms of indigestion, flatulence, and discomfort after operation He regarded duodenal diverticula as an accidental finding, and did not consider that they accounted for the patient's symptoms They lent themselves to a false diagnosis, whilst the real trouble, such as a pathological gall bladder or a chronic appendix, was possibly missed

Dr H W A POST (London) considered that the mucous membrane technique was an important aid in the diagnosis of some lesions of the stomach and duodenum. The general appearance of the mucous membrane of the stomach was constant, there usually being some two to four primary rugæ and some four to eight secondary rugæ The direction of the folds was from cardia to pylorus In the resting duodenum the folds were not constant in number and their direction was longitudinal The mucous membrane of the stomach and duodenum was examined by means of a suspension of barium sulphate in water This was spread over the mucous membrane by posturing the patient in all positions from the erect to the Trendelenburg, from the right lateral to the left lateral, and by manipulation and compression Any suspected lesion was then radiographed under direct screen control by means of specially constructed pieces of apparatus Examination of the mucous membrane demonstrated ulcers which would not have been seen by ordinary methods It was also an aid in showing the characteristics of an ulcer such as its size and age, and whether mal nant changes were present It also enabled a dia nosis of gastritis to be made Examination of mucous membrane was particularly import the duodenum where deformity might be du extrinsic lesion to periduodenal adhesions acture or a healed ulcer It was only in th stration of an ulcer that a definite diagn was made Again in certain cases th no deformity of the duodenum, and ulcer might be present which was only mucous membrane technique

Dr G R MATHER CORDINER (with the ordinary methods the di er was mainly one of infer evidence was the niche, and this could be shown consistently on the film by employing the Berg technique—aimed exposures made under dosed compression. The danger of the method lay in the inexperienced diagnosing every spot of barium localised in the duodenum as an ulcer niche. Provided certain features were present before any residue was diagnosed as a niche, the danger of misinterpretation was negligible. The niche could usually be shown in two planes, en face and in profile. In the en face view a halo of inflammatory œdema could be seen surrounding the niche. As healing took place a radial convergence of the mucosal folds towards the niche was often present. In the profile view a concave indentation of the adjacent profile on either side of the niche was a constant and essential feature of niche formation. Unless these features were present either en face or in profile, or better still in both views, there was no justification for a diagnosis of duodenal ulcer. The classical contour deformities of the duodenum were present in a small percentage of cases. They were the result of scarring changes from old ulceration, and did not necessarily imply that an ulcer was actually present. Similarly a duodenum which showed a normal contour by the ordinary methods did not exclude the presence of an ulcer. A large proportion of ulcers did not produce deformity of the duodenal contour and were concealed when the duodenum was distended. Indirect signs were of no diagnostic value whatsoever in duodenal ulcer, as they frequently occurred with extraduodenal lesions. The penetrating or adherent character of an ulcer could invariably be shown if Berg's technique was employed. It was important to recognise the presence of penetration, since many of these cases were quite refractory to medical treatment. The importance of obtaining a picture of the duodenal mucosal relief lay in the certainty with which a clinically suspected duodenal ulcer could be excluded in the presence of a normal mucosal picture.

The PRESIDENT said that re-examination after the administration of antispasmodics was useful in differentiating spasmodic from organic manifestations. He agreed with Dr Vilvandré that pylorospasm was often present in duodenal ulcer, and entirely disagreed with the view expressed by Dr Cordiner who had stated that pylorospasm did not occur.

Dr SHANKS, in reply, said he was interested in Dr. Payne's remark that the disappearance of tenderness and not its absence was to be regarded as a sign of healing. The mucosal relief examination was very interesting but there were many dangers of misinterpretation. It had not yet reached a stage when its findings were sufficiently certain. Personally he would not allow his abdomen to be opened on a mucosal relief interpretation.

SECTION OF ORTHOPÆDICS

Mr HARRY PLATT (Manchester), the president, took the chair at a meeting of this section when a discussion on

Acute and Chronic Sprains

was opened by Mr W ROWLEY BRISTOW (London). Mr. Bristow emphasised the extreme importance of these injuries in practice—an importance, he said, that had been too little impressed on the dresser and house surgeon. Minor surgery ceased to be minor surgery once the hospital was left behind. It was well for surgeons to review their ideas on conditions of such common occurrence and to make sure that these ideas were based on sound principles. Of the first importance was the rôle of the muscles in the movement and protection of joints. When a joint was subjected to any severe and sudden strain the ligaments and bone were protected from trauma until the muscles gave way. The fact of tearing of ligaments presupposed the injury of muscle, and often it was the muscle injury that was of primary importance. The ligaments were the second line of defence, and the extent of the injury of a ligament depended on the degree of force to which it was subjected, varying from tearing of a few of its fibres, usually from one or other of its attachments, to complete rupture with detachment of a flake of bone or tearing away of the periosteal attachment. As an example of an injury in which muscle tearing was of more importance than a concomitant fracture, Mr Bristow cited fracture of the transverse process of a vertebra. Treatment of the soft parts should here take precedence.

In the diagnosis of acute sprain it was in practice only necessary to exclude fracture. The site of local tenderness usually gave the clue: when tenderness was most marked at the point of ligamentous attachment it was strong presumptive evidence of sprain. Radiography was necessary in every case, the essential points to observe were to have plates taken in two planes, and to ensure the interpretation by someone—whether radiologist or surgeon—who understood what he was looking at. Particularly in children, it was of value to have a radiogram of the opposite limb.

Before the importance of sprains was recognised, the usual treatment had been to exclude fracture by X ray examination, and then to apply an evaporating lotion and a bandage and let the patient look after himself. Massage and physical treatment had improved matters to some extent, but it had not to any extent increased the interest taken in these injuries by the medical student. The principles of treatment were threefold: (1) to limit swelling by pressure; (2) to protect the injured ligaments by suitably applied layers of strapping; and (3) to encourage return of function, by early use of the affected limb. In acute inversion sprain of the ankle it was important that the pressure bandage should be so applied that every turn came round the heel. The common figure-of eight bandage was inefficient. In the recurrent sprain raising the heel some 3/16 in. and "floating out the heel" was a useful device. Attention to the injured muscle was of fundamental importance. Massage, the automassage of use, and the graduated muscular contractions produced by faradic stimulation all had their place. Massage should never cause pain, but should be gentle and sedative in action.

The severe rotation sprain of the knee-joint, now rather commonly seen after ski-ing accidents, was not recovered from rapidly on any form of treatment. A conspicuous feature of it was the protective muscular spasm which held the joint in about 10° of flexion and often led to a wrong diagnosis of internal derangement and of rupture of a semilunar cartilage. Operation was the wrong treatment.

Chronic sprain was the result of a neglected or incorrectly treated acute sprain. This might result in (1) persistent pain, (2) muscle atrophy; (3) limitation of joint movement, or (4) recurrent synovitis. Examples cited were the gross limitation of movements of the shoulder-joint and chronic effusion in the knee-joint. In these conditions the manipulative surgeon had his field His function was to break down adhesions, force joint movement, and if possible to restore its normal range Knowledge of anatomy was an advantage and not, as might be supposed, by the popularity of the non qualified practitioner, a disadvantage Adhesions in a joint caused not only limitation of movement, but also pain and a feeling of insecurity, because of the pull on adventitious bands Very slight limitation by such a band might pass unnoticed by the surgeon and yet might be a cause of considerable crippling to the patient Manipulation under an anæsthetic might well break down an adhesion which had been completely undetected on clinical examination Two points should be emphasised first, that X ray examination should precede manipulation, and secondly, that full general anæsthesia should always be used for forcible manipulation In the differential diagnosis between stiffness of a joint due to adhesions and stiffness due to inflammation the teaching of Sir Robert Jones was most useful This was that inflammation limited movement in every direction , adhesions limited it in certain directions only The principles of treatment of the chronic sprain were (1) to overcome limitation of movement and (2) to build up the musculature Where there was much musculature atrophy, such as might occur in the quadriceps group exercise and massage alone were insufficient to produce full recovery , faradic stimulation was necessary The treatment of a joint after breaking down adhesions was much the same as that for acute sprain The coöperation of the patient was essential At any age over 45 one could not be as confident of obtaining a cure of a sprain as in younger life Sepsis and disordered metabolism might be responsible for keeping up the trouble Severe degrees of muscle injury should be given a guarded prognosis

Mr Bristow ended with a plea that the teaching of all these minor injuries should be given much more prominence in the curriculum of the medical student

Mr GORDON IRWIN (Newcastle) thought that sprains might cause more functional and organic disability than many fractures An acute sprain was an internal wound of tissues which underwent processes of healing similar to those observed in external wounds The popularity of massage had produced an attitude to injuries in which the absence of fracture was regarded as an indication that the tissues should be rubbed This was quite wrong For severe sprains he used plaster of-Paris as a protective splint , strapping and Elastoplast were used for lesser injuries In the part of the world from which he came the problem of the sprained back was a very important one At hospital the patients were rarely seen in the acute stage but after they had been kept in bed for seven or eight weeks with application of a little lead lotion The period of disability was quite a long one , in his own cases it had varied from five weeks to three months Of 100 cases examined 20 showed arthritic changes In his opinion manipulation without anæsthesia gave much better results than with anæsthesia He agreed that a toxic focus might aggravate the symptoms of a sprain , and that active and efficient treatment in the acute stage was the way to prevent the development of chronic sprain Finally, he urged the abolition of the term "sprain" in favour of accurate diagnosis of each individual lesion

Mr T P McMURRAY (Liverpool) said that the terms "sprain" and "rheumatism" were equally vague The tenderness of a torn ligament was over the insertion of the ligament into the bone Pressure should be used to improve the circulation of the limb, and never as a pad causing local pressure over the torn ligament The case in which adhesions had to be broken down should be treated seriously , the manipulation should be done under anæsthesia and the patient put to bed The workman who knew that he had a fracture of the back—even so slight as the fracture of a transverse process—was a very serious problem The chances were that, owing to his mental outlook and the consideration of compensation, he would never work again It was of no use treating him as a case of muscle injury, and neglecting the fracture, which to him represented a "broken back"

Sir MORTON SMART (London) gave four reasons why the protective power of muscles might fail and injury to joint result (1) the extent of the injury might be too great and might overcome the power of resistance of the muscle , (2) the muscle might be caught unaware by the suddenness of the onslaught , (3) the muscle might be fatigued , and (4) previous injury or disease might have led to lack of muscle tone The importance of the peri-articular areolar tissue must be recognised Injury of the joint led to œdema of this tissue, to its consequent malnutrition by stagnation of lymph and to a process of hardening and finally to imperfect repair Recovery depended not only on the rate of absorption of the effusion, but on its eventual completeness It was important to have complete restoration of muscle tone and contractility, and for this he relied mainly on treatment by graduated and controlled electrical stimulation Only when the muscle tone was normal and its response quick was the joint properly guarded

Mr W ELDON TUCKER (London) held that the effusion into the joint was one of the chief factors delaying recovery from sprain , and quick application of a firm bandage might prevent it Where fluid in any quantity had become effused he believed it should be aspirated He also described the formation of an encysted collection of serum by seeping of the fluid along the muscle planes

Mr G R GIRDLESTONE (Oxford) drew attention to what he considered the great danger of too early manipulation in certain injuries—particularly after shoulder joint injuries It might be necessary to allow as long as three months to elapse

Mr B WHITCHURCH HOWELL (London) said that care must be taken to treat each case of skiing injury to the knee-joint on its own merits In many cases extension was definitely limited by the presence of a wedge of inflamed tissue After distraction of the joint surfaces extension might be gradually and painlessly produced He liked the abduction splint for the treatment of shoulder injuries He emphasised the fact that sprain did not lead to rheumatism

Sir MORTON SMART in his reply emphasised the importance in a case in which adhesions had been broken down, of moving the joint next day through its full range Mr BRISTOW said he considered that movement without anæsthesia should be reserved for acute and mild cases Manipulation of the shoulder should certainly be left till the acute stage of the sprain had passed off Plaster-of Paris splinting was an important part of the treatment in severe injuries of the knee joint such as complete rupture of the internal lateral ligament (in his experience a very rare injury) The diagnosis between sprain and fibrositis was a question of history alone If the injury that produced the pain and disability was trivial the diagnosis was fibrositis

THE MEDICAL REGISTER

UNTRACEABLE PRACTITIONERS, 1934

WE are asked by the authorities of the General Medical Council to publish the following list of registered medical practitioners who had not, when the list was sent to press, replied to letters written to them on behalf of the Council under Section 14 of the Medical Act, 1858, in order to ascertain whether their addresses on the Medical Register are still correct. The date given after each name is the date of original registration; the qualification given is the principal qualification registered by the practitioner The letters (E), (S), or (I) indicate whether the practitioner was originally registered in England, Scotland, or Ireland; and the expressions (Col) or (For) indicate that the practitioner is registered in the' Colonial List or in the Foreign List in the Register Any practitioner, wherever resident, who finds his or her name in the list should write without delay to the Registrar, General Medical Council, 44, Hallam-street, Portland-place, London, W.1, unless he or she was originally registered in Scotland Practitioners originally registered in Scotland should write directly to the Registrar of the Branch Council for Scotland, 12, Queen-street, Edinburgh, 2 The name of every practitioner in the list from whom a further communication is not received at a very early date will be omitted from the next issue of the Register in accordance with the provisions of Section 14 of the Act of 1858.

Aldred, Fred M , L S A , 1899(E)
Allen, V E N , M.R C S , 1928(E)
Allman, Percy N , L R.C P & S , 1910(I)
Anderson, James McL , M R C S , 1928(E)
Astin, George, L R C P & S , 1891(S)
Atkinson, Thomas R , M D , 1881 (E)
Avetoom, Sarkies T , L R C P , 1879(S)

Bachrach, Georgette, M R C S , 1924(E)
Baillie, George, M B , 1900(I)
Barkworth, Hy S , M R C S , 1889(E)
Barrett, Ernest, M R C S , 1886(E)
Baxter, Geo S M , L R C P., 1882(I)
Bayer, Philip, M B , 1925(S).
Beatson, Charles H , C B , L R C P , 1873(S)
Beattie (Mrs), Margaret H , M R C S , 1926(E)
Beatton, Gilbert T , M.D , 1887(S)
Bennett, Hugh, M B , 1892(S).
Blake-Campbell, John F , L R C S , 1884(I).
Blatchley, John B C , L R C P & S , 1894(E)
Bluett-Duncan, Duncan C - (formerly Bluett, D C), M R C S , 1917(E)
Bond, Hopetoun E , L R C P & S , 1910(S)
Boyle, James, M.B , 1900(S)
Brierley, Wilfred E , F R C S , 1904(E)
Briscoe, Edward V., L M S.S A., 1921(E)
Browne, Edward W , M R C S , 1900(E)
Buck, Mary, M R C S , 1923(E)
Buckland, Henry S , B Ch , 1931(E)
Burke, Hubert W , L R C P , 1883(E)
Burke, Ulick J , L R C P & S , 1897(I)
Byrne, Hannah, M B , 1924(I)

Calverley, William, M B , 1904(E)
Cameron, Donald, M B , 1924(S)
Cameron Hugh F , M B , 1890(S)
Cartwright, Robert P , M B , 1907(S)
Chaldecott, John H , L R C P , 1886(E)
Chapple, W A , M D , 1909(Col)
Cheesman, John E , L M S S A , 1915(E)
Choudhuri, Lakhmi M , L M S , 1930(Col)
Chowry Muthu, David J A , M R C S , 1889(E)
Clarke, William A , M B , 1931(S)
Cook, Alice M , M B , 1925(E)
Cook, Lewis, *C I E* M.B , 1899(E).
Cook, Philip I , M D , 1881(E)
Cooke, Edward R C , *M C* , M R C S , 1913(E)
Cooper, Edward H , M R C S , 1896(E)
Corbett Percy B , M B , 1915(S)
Cross, Henry C D , M B , 1907(S)
Curaba, Francesco, M D , 1930(For).
Cussen, Gerald E , M B., 1920(Col)

Dalal, Kharshedje A , M B , 1875(S)
Daly, Frederick J P , M R C S , 1899(E)
Davies, Thomas H R , M R C S , 1922(E)
Davis (Mrs), Ellen J , M B , 1920(S)
Dickson, James A , M C P & S , 1930(Col)
Dillon, Henry V MacM (formerly Dillon, H V), L R C P , 1882(I)
Dockrell Morris, L R C P & S , 1917(I)
Doody, William J., M B , 1924(I)
Dunbar, Henry J , *O B E* , M D , 1902(S)

Eskell, Bertie C , M R C S , 1910(E)
Fernando, William H , L M.S , 1921(Col).
Fieldman, Louis (formerly Feldman), M B , 1922(S)
Fischer, Lewis G , M B , 1886(S)
Flannery, Horace T , L R C P. & S , 1925(I)
Freeman, William J , M B , 1929(Col)
Fry, Walter B , M B , 1932(Col)

George, Thomas E , M B , 1915(Col)
Ghose, Fokeer C , L R C P , 1868(S)
Gibbon, Thomas H , *O B E* , M D , 1903(I)
Gillespie, John M , *M C* , M B , 1912(S)
Glaister, Joseph, M B , 1905(S)
Gollerkeri, Ganesh V , M D , 1922(Col)
Greson, Lionel P , M B , 1924(S)
Gulati, Mohan L , M B , 1930(Col)

Haddick, George, M B , 1920(I)
Hammer, Norman W , M R C S , 1924(E)
Hanly, John J , L R C P , 1884(E)
Hanson, Edgar R , L R C P & S , 1881(S)
Harley, Thomas W , *C I E* , M B , 1901(I)
Harling, Thomas, L R C P & S , 1888(S)
Hart, James D , *M C* , M B , 1905(S)
Hartzhorne, Bernard F , M R C S , 1884(E)
Hearth (Mrs), Pauline K (formerly O'Flanagan), M B , 1924(I)
Hedley, Wallace T , M B , 1893(S)
Hehir, Sir Patrick, *K C.I E* , *C B* , *C M G* , M D , 1883(S)
Hingston, Clayton A. F , *C I E* , *O B E* , M R C S , 1901(E)
Hodgson, Harold W , *M C* , M R C S , 1900(E).
Holmes, Joseph, L R C P , 1882(E).
Homer, Charles, L R C P & S , 1908(S)
House, Dennis R , M R C S , 1928(E)
Hughes, George E , L R C P , 1886(I)
Hutchinson, Victor P , M R C S , 1909(E)

Ireland, Arthur J , M D , 1922(Col)
Irvine, Gerard B , *C B* , L R C P , 1885(I)

Jenkins, Aneurin E , M R C S , 1921(E)
Jones, David W , M R C S , 1914(E)
Joshi, Manishanker K , F R C S , 1913(E)

Kennedy, Denis G , M B , 1931(E)
Killery, St John B , M.R C S , 1892(E)
Kingston, Arthur E , M R C S , 1927(E)
Kinnear, Joseph, L R C P. & S , 1930(S)
Kitchen, John Edward, L R C P & S , 1916(S)
Knox, Alexander Walker, M D , 1886(S)
Kumaran, Natiyala K , M B , 1930(Col)
Kuraishy, Nawab Ahmad, M B , 1931(S)

Landau, Max M , M R C S , 1931(E)
Lane, Cecil A , M B , 1882(S)
Lau, Edward Ek. D , M B , 1915(E)
Lauchlan (Mrs), Marget Agnes (formerly Craig), M B , 1923(S)
Lee, Alfred A W H , L R C P , 1882(E)
Lee, John C , M R C S , 1929(E)
Lewis, Wm E V , M R C S , 1901(E)
Liptrot, Alfred B , M R C S , 1883(E)
Littlejohns, Archibald S., *D S O* , M R C S , 1904(E)
Lory, William M , M R C S , 1878(E).
Lowell, John Joseph, M B , 1901(S)

Macarthy, James Joseph, M D , 1859(I).
Macdonald, George C , F R C S , 1883(E)
McElroy, William, L R C P. & S , 1917(S)
McGann, Terence J , F R C S , 1866(I)
MacGarry, Percival V , M R.C S , 1927(E)
Macpherson, Donald Aldridge, L R C P & S , 1911(S)
McTavish, Willson A , L M S , 1932(Col)
Mallannah, Sreenagula, M D , 1896(S)
Martin, James H , *D S O* , M R C S , 1864(E)
Mason, John Wharton, M B , 1922(S)
Massie, Francis Edward, M B , 1928(S)
Mazzarella, Gerardo, M D , 1930(For)
Miller, William, M B , 1901(S)
Mills, Ieuan A , M R C S , 1927(E)
Mitchell, Percival A , M B , 1898(S)
Muirhead, Edith A , M R C S , 1932(E)

Neilson, Edith M , M B , 1921(S)
Nevill, William N , M D , 1886(I)
Nicholls, Henry M , M B , 1899(E)
Norman, Sir William H , *K C.B* , M R C S , 1879(E)

O'Connor, Caroline, M B , 1921(I)
O'Donoghue, James B , L A H , 1911(I)
O'Rorke, Charles H , M B , 1907(I)
O'Rourke, Hugh C , M B , 1930(I)
O'Sullivan, Michael J , M B , 1927(I).
Owens, Robert D , M B , 1925(E)

Parthasarthe, Chengleput, L R C S , 1929(S)
Perkins, Herbert E , L R C P., 1908(E)
Perry, Francis F , *C M G* , *C I.E* , M R C S , 1876(E)
Phinney, Willoughby M , M B , 1930(S)
Pooley, George H , F R C S , 1894(E)
Potts, Edmund T , *C M G* , *D S.O* , M D , 1901(S)
Powell, George, *M C.*, L R C P & S , 1914(I)
Prasad, Madho, M B , 1921(Col)

Rai, Dewan Ganpat, L R C P. & S , 1899(S)
Rankin, Margaret E , M B , 1923(S)
Rankin, Reginald J , M R C S , 1925(E)
Rattray, Alice, M B , 1916(S)
Robertson (Lady), Helen L , M B 1914(E).
Ronayne, Charles R L , M B , 1900(I)
Rosser, Ednyfed ap I , M R C S 1927(E)

Sabery, Mohamed A B , M B , 1933(Col)
Samuelson, Gerald S , M B , 1888(E)
Schewel (Miss), Gitta, M R C S , 1926(E)
Scott, Francis G , M R C S , 1892(E)
Scriven, Robert D , M R C S , 1933(E)
Scutt, Tom, M R C S , 1884(E)
Shanahan, Daniel D , *C M G* , *D S O* , L R C P. & S , 1889(I)
Shem, Albert K , M B , 1928(Col)
Shepherd, James F , M B , 1922(S)
Siff, Louis, M B , 1921(S)
Sims George H , M B 1918(E)
Sinclair, Andrew M , M B , 1890(S)
Slotar, Solomon, L M S S A , 1927(E)
Smith, Alistair H., M B , 1925(S)
Smith, Robert B , M R C S , 1886(E)
Somerville, Thomas V , *O B E* , *M C* , M R C S , 1914(E)
Southern, Francis G , M R C S , 1885(E)
Spence, William A C , L R C P. & S , 1900(S)
Stewart, Thomas W , L R C P. & S , 1920(S)
Stockwell, John F , L S A , 1894(E)
Strang, Thomas F , M B , 1925(S)
Swabey, Maurice, M R C S , 1892(E)
Sweet, John B , L M S S A , 1924(E)

Tate, Arthur L , L R C P , 1876(E)
Taves, Archibald W , M R C S , 1919(E)
Taylor (Mrs), Christobel M , M.B , 1929(E)
Taylor, George F N , L R C P & S , 1894(S)
Taylor, Joshua J , M D , 1895(E)
Thistlethwaite, Eleanor C , M B , 1920(S)
Thomas, Albert E , M B , 1901(E)
Thompson, Patrick O , M R C S , 1892(E)
Tobin, Thomas M , M B , 1925(I)
Tomory, David M , *D S O* , M B , 1890(E)
Trafford, William L , M B , 1901(S)
Trotter, Dorothy I (formerly Henry) M.B , 1924(I)
Trotter, George J E , L R C P , 1886(E)

Unwin, Percy B , L R C P & S , 1896(S)

Varey, Maynard, L R C.P & S , 1900(S)
Vaus, Nellie, L M S S A , 1920(E)
Voon, Kim Chong, L R C P & S , 1927(S)

Walker, Dora M , M B 1918(S)
Wan, Ying S., M R C S , 192[illegible](E)
Waterhouse, George B L S A 1880(E)
Watney, Martyn H , M B , 1912(E)
Watson John Wallace, M D , 1880(E)
Welchman, Edward M R C S , 1872(E)
Wendell John, M B , 1922(S)
Whitaker, John M , L R C P 1880(I)
Whitehead Ethel M. (formerly Morgan) M B 1910(E)
Whitwell, Robert R H , M B , 1880(S)
Widdup, Harold P , M B 1924(I)
Williams Arthur J , L R C P & S , 1901(S)
Williams Glyn, M R.C.S , 1924(E)
Wilson, George E., L R C.P & S , 1924(I)
Wilson, William M , M B , 189[illegible](S)
Wood Norman W , L.M.S S.A 1927(E).
Woods Charles G M D , 1883(I)
Wyncoll John W M.B 1888(S)
Wyper James, M B , 1906(S)

Yeo, Robert M. M.R C S , 1913(I)
Young, Edward H , M D 18[illegible](E)

PUBLIC HEALTH

The Childbearing Woman

DURING 1933 2618 deaths directly due to child bearing were recorded in England and Wales—a mortality rate of 4 51 per 1000 live births This is the highest figure recorded since the present form of classification was introduced, a slight increase having occurred in both the death rate from sepsis and the rate from other causes

MATERNAL DEATHS

The Ministry of Health issued a special form to medical officers of health in August, 1932, together *with a letter inviting confidential reports on maternal* deaths in their areas In his annual report[1] Sir George Newman states that 2148 returns have been received, many of them giving evidence of careful investigation , 8 counties, 7 county boroughs, and 5 metropolitan boroughs have failed to make any return Excluding 344 cases of abortion and 45 of ectopic gestation, 1759 reports remain, in 1291 of which the investigator has expressed an opinion as to whether death could probably have been prevented by (1) better antenatal supervision, (2) better obstetric facilities at delivery, (3) specialist *treatment in hospital, and (4) intelligent coöperation* of the patient Sir George says

> The opinions submitted show that *lack of antenatal care* was considered a factor in the fatal result in 406 cases that *obstetric facilities* and specialist treatment were inadequate or insufficiently made use of in 450 cases and that *lack of coöperation on the part of the patient* played an important part in 298 cases In 12 cases home conditions, and in 17 malnutrition and debility were noted as definitely contributory causes In 21 cases it was stated that safety could only have been secured by avoidance of pregnancy

ANTENATAL CARE

Some degree of antenatal care was supplied in 1347 cases, it was altogether absent in 284, and no information is forthcoming in respect of 128 patients Among the 406 cases in which lack of antenatal care is considered to have contributed to the fatality 284 were totally unsupervised and 122 only received supervision scanty in amount or poor in quality The series included 160 deaths (7 7 per cent) due to eclampsia In only 27 of these is there any record of blood pressure being taken, and in 32 there was no antenatal care, the patient having failed to book an attendant or to follow advice in 22 of them

The proportion of women attending antenatal clinics is steadily rising, the number in 1933 representing 42 2 per cent of all notified births as compared with 27 3 in 1930 There are, however as Sir George points out certain essentials in the conduct of a satisfactory clinic, some of which are by no means easy to secure The staff should be specially experienced in obstetric work, and the examination of patients should be thorough including investigation of the nutrition and general condition of the patient The importance of study and record of the blood pressure is emphasised, as is the necessity of sympathetic support of the clinic by doctors and midwives practising in the district and intimate association (where practicable identity) of the staff with those responsible for attendance at the confinement Sir George criticises the tendency of some medical officers of antenatal clinics to concentrate unduly on a search for major obstetric abnormalities and to pay too little attention to the general hygiene of pregnancy and to discomfort and minor departures from health

> "This attitude" he says "may unfortunately be *reflected in that of the mothers who may be so impressed* with the possible perils of pregnancy and childbirth that they develop a constant sense of anxiety as to what the future may bring "

And he adds that the establishment of confidence and a happy mental attitude in the patients is one of the first duties of the staff of an antenatal clinic The value of the work at these clinics is greatly enhanced by the provision of in patient treatment for grave disorders of pregnancy and for intercurrent diseases during pregnancy

ABORTION

The precise influence of abortion on maternal mortality is, Sir George states, a matter of conjecture, there being no system of notification in this country Frequent allegations that increased deaths from puerperal sepsis may be due to increase in the proportion of deaths from septic abortion are not based on statistical proof, but there is a good deal of evidence to suggest that abortion plays a not inconsiderable part in the roll of deaths due to puerperal sepsis, some 24 per cent of such deaths in 1933 having occurred after abortion Sir George *draws the moral that all maternity and child welfare* authorities should carefully review their provision of suitable accommodation for cases of abortion. In many areas there are no special facilities for hospital treatment, and patients suffering from threatened or incomplete abortion are admitted to maternity homes or hospitals or to general hospitals while cases of sepsis following abortion are admitted to general hospitals or wards for treatment of puerperal sepsis and even occasionally to maternity institutions This highly dangerous arrangement is strongly deprecated, Sir George expressing the opinion that "the only safe procedure to adopt is to treat all cases of abortion as infective, and to admit them only to such institutions as are arranged, staffed, and equipped so as to provide the patient with the highest available medical and nursing skill in the most suitable surroundings

CONTRACEPTION

A good deal of pressure has been brought to bear on local authorities in recent years to induce them to provide facilities for instruction in artificial contraception, and some notes on this subject are included in the report It is pointed out that, while some form of birth control has existed from early stages of human history, its practice has recently become more concrete and more artificial, and has received a large measure of public discussion The real change is in methods and their application, and there are, Sir George contends, substantial disadvantages in indiscriminate and unskilled artificial contraception which should be recognised. There is a danger lest organised popular instruction in birth control should become propagandist and pseudo-authoritative in presentation and impression, and it may lead to commercial exploitation of means. Unsafeguarded practice of contraception may be *anti-social in its effects*, and the means used *may* have deleterious results, social or physical, besides failing in their object in a considerable proportion of cases where application is unskilled. Medical knowledge and experience have not so far devised any absolutely reliable method of contraception It must be recognised that methods which may be used wisely and beneficially may also be used for selfishness, debasement, and the encouragement of undesirable habits, *and that artificial contraception* "cannot in any case be a substitute for social amelioration, self-control, restraint, mutual consideration, or decent and worthy conditions of life "

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[1] On the State of the Public Health Section III Maternity and Child Welfare H M Stationery Office 1s 6d

At first sight the existence of 2820 maternity and child welfare centres appears to furnish convenient accommodation for providing instruction in birth control, but, as has already been pointed out by the Ministry of Health, such organised instruction is really alien *to the purpose of a centre* established for the use of expectant and nursing mothers, the objects of which are education and supervision of the mother in the nurture of her child The welfare centres are not designed or equipped for the treatment of disease of either mothers or children The Ministry of Health takes the view that the use of the centres for giving systematic advice and instruction in birth control methods would be likely to damage their particular work It recommends that women for whom avoidance of pregnancy seems desirable on medical grounds should be referred for advice as to birth control to a private practitioner or to a suitable hospital or clinic, and that these cases should be dealt with under conditions which will not disturb the normal work of the centres The position is maintained that local authorities have no general statutory power to establish birth control clinics as such, but, since the Public Health Acts confer upon them power to provide clinics for sick persons, there is no obligation to limit their functions to attention on gynæcological conditions Married women suffering from such organic disease as tuberculosis, heart disease, diabetes, chronic nephritis, and the like, to whom childbearing is likely to endanger life, may therefore suitably be dealt with at such clinics, and some 75 or 80 local authorities have made arrangements to provide contraceptive advice to mothers for whom further pregnancies would be detrimental to health. The medical practitioner in charge of the clinic is responsible for deciding what is or is not medically detrimental to health Various societies have established birth control clinics on a voluntary basis, and Sir George says that, while patients attend for a number of different reasons—diagnosis, advice as to spacing their children or preventing further pregnancy, for help in morbid conditions affecting their health, and so forth—the whole purpose of the clinics should be "the prevention of disease or impairment in the mother or her offspring, and the ensurement of the health of both."

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT. 15TH, 1934

Notifications—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 2697; diphtheria, 1372; enteric fever, 30, acute pneumonia (primary or influenzal), 556; puerperal fever, 40; puerperal pyrexia, 102; cerebro-spinal fever, 13; acute poliomyelitis, 27; acute polio-encephalitis, 1; encephalitis lethargica, 4; continued fever, 1 (Westminster); dysentery, 25, ophthalmia neonatorum, 76. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London *County Council on Sept 24th-25th* was *as follows* Small-pox, 0, scarlet fever, 1400; diphtheria, 1478, measles, 282, whooping-cough, 260, puerperal fever, 24 mothers (plus 12 babies); encephalitis lethargica, 269, poliomyelitis, 8, "other diseases," 254 At St Margaret's Hospital there were 23 babies (plus 10 mothers) with ophthalmia neonatorum

Deaths—In 121 great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 5 (0) from measles, 1 (0) from scarlet fever, 8 (0) from whooping-cough, 42 (9) from diphtheria, 62 (19) from diarrhœa and enteritis under two years, and 15 (1) from influenza The figures in parentheses are those for London itself.

Leicester reported the only death from enteric fever. Fatal cases of diphtheria occurred at Leeds 6, Southampton, Liverpool, and Middlesbrough each 3, Bradford and Newcastle-on-Tyne each 2 Birmingham reported 8 deaths from diarrhœa, Hull and Liverpool each 3, no other great town more than 2.

The number of stillbirths notified during the week was 246 (corresponding to a rate of 41 per 1000 total births), including 31 in London.

MEDICINE AND THE LAW

Wrong Bottle taken from Drug Cupboard

AN unfortunate mistake in taking the wrong bottle from a drug cupboard was investigated by the St Pancras coroner on Sept 13th and 18th and may well cause hospital authorities to review the possible precautions in such cases Mrs Colbert, an out-patient at the Metropolitan Ear, Nose, and Throat Hospital, had undergone two nasal operations and was attending for treatment thereafter The nose was to be washed with an alkaline solution and protargol was to be put in A probationer nurse of 18 months' experience, about whose carefulness and trustworthiness on all other occasions there was no possible doubt, administered chromic acid from an "external application bottle," mistaking it for a bottle of protargol. The two bottles were kept in a single small cupboard over the mantelshelf in the out-patients' department Questions were asked, on behalf of the deceased's husband, as to whether it was right to keep the two drugs in the same cupboard and in bottles which externally, except for the label, looked very much alike The doctor in charge of the out-patients' department replied that he had been used to a similar arrangement both at this hospital (where it had existed without previous mishap for 20 or 25 years) and at another hospital If there were any suggestions for the future, such as the use of separate types of bottles, they would do their utmost to carry them out The bottle containing the chromic acid was, he added, of the type in which chromic acid was usually issued by druggists The senior surgeon at the hospital said he had been in touch with seven other hospitals and had ascertained that the arrangement already described was used at all of them The coroner observed that he had to consider whether or not any liability arose whereof his court could take notice He came to the conclusion it did not No one, he said, would dream of suggesting anything but misadventure in a case of this kind It must be apparent that, with two outwardly similar bottles kept in one cupboard, the possibility of their being mixed up was always present It was a possibility that must be guarded against, and he suggested that in all hospitals where a similar system prevailed the cupboard arrangements should be overhauled to make a recurrence of the mistake impossible He recorded a verdict of "death by misadventure" It was stated on behalf of the hospital that steps had already been taken to install a second cupboard in the out patients' department, so that there might be separate accommodation for dangerous and quasi-dangerous drugs

An Austrian Deadlock

A fresh anxiety has been added to the cares of the Government of Austria. The *Times* recently published a message from its Vienna correspondent regarding the piercing of ear-lobes for the purpose of wearing ear rings The shops of Austrian jewellers, we are told, are full of unsold ear rings , the doctors maintain that the incision of ear lobes is too trivial a matter for a dignified profession , meanwhile the Ministry for Social Administration has decided that the piercing of ear lobes is a surgical operation which must be performed only by properly qualified practitioners It is not easy to keep pace with the changes in the law of other countries, especially in those cases where a strong central executive has replaced an old fashioned legislature One can only contrast the protection given to the medical profession in Austria with the spirit of toleration in England where any untrained person is at liberty to take fees for treatment of the gravest diseases

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PARIS

(FROM OUR OWN CORRESPONDENT)

MEDICO LEGAL SEQUELS TO THE TREATMENT OF FRACTURES

ON Sept 10th last year a Dr X was summoned to a boy of 9 who had just broken both bones of the left forearm near the wrist Three hours after the accident he had immobilised the fracture in plaster Two days later a Dr Y, who happened to be in the neighbourhood, saw the patient and remarked that his fingers were cyanosed Being of opinion that the pressure of the plaster should be relaxed, Dr Y conveyed this opinion to Dr X, who, though he admitted the existence of the cyanosis, cut away only a little of the plaster Dr X saw the patient again two days later, on Sept 14th, when, finding an increase of the cyanosis, he once more eased the pressure on the fracture He called again on Sept 15th when the splint was removed Gangrene supervened, and on Oct 8th the arm had to be amputated below the elbow In the course of the action brought against Dr X it was pointed out by three experts that the pathogenesis of circulatory disturbances following fractures of the forearm is still obscure, and that such disturbances may supervene after the most skilled application of plaster In the opinion of these experts no one could say with certainty what had been the cause of the gangrene in this case The Court of Appeal of Toulouse before which this case was brought, did not challenge this reasoning But, it was held, the very fact that dangers lurk behind even the most technically skilled immobilisation renders it incumbent on the doctor in charge to keep a close watch on the case, a precaution neglected by Dr X, who had left his patient unattended for 48 hours Accordingly, damages to the tune of 20,000 francs were awarded

There are limits, however, to the financial yield of doctors requested to pay for their mistakes One summer's day some ladies were motoring through Normandy when there was a skid and a smash The driver was found by a local doctor, summoned in all haste, to have fractured her right radius She was tended promptly on the spot, and later in hospital, where the fracture was set under local anæsthesia, plaster and bandages being used in the process These had been readjusted once when the patient who was holiday making, saw fit to return to Paris, where she *consulted a surgeon* *The skiagram now* taken of her wrist showed displacement of the right radius, and it was so serious that an operation had to be performed , indeed, even six months later satisfactory union of the bone had not yet been achieved The local doctor, who had received 400 francs for his services, was now sued for 75,000 francs—the sum at which the lady assessed that element of her sufferings for which she held him responsible He was not only completely exonerated but was made the object of such a vindicative appreciation in court that the complainant had no heart for an appeal against the verdict

PHILANTHROPY WITH AN ARRIÈRE PENSÉE

Lieut Colonel Coudray, dipping into the records of medical inventions of more than a century ago, has found therein much food for melancholy meditation (Arch de méd et de pharm milit , Sept , 1934, p 355) The emotions and aspirations evoked by the French Revolution were apt at times to lack the altruistic touch Members of the Government approached by scientific discoverers used to refer them to the Conseil de Santé on which several leading medical men of the day served The chief object of the solicitude of inventors was the Army, and venereal disease seemed to have made a special appeal for them One of these would be benefactors was a certain Jeudy de l'Hommande who, in the year II of the Republic claimed to have discovered a remedy for syphilis and psoriasis which, by the promptitude of its action and the invariable felicity of its results, was superior to all the drugs hitherto in usage, mercury in particular The Conseil de Santé invited de l'Hommande to present himself and to state what was the composition and mode of employment of his remedy He duly accepted the invitation, but flatly refused to give the desired information, whereupon the Conseil de Santé ruled that "as humanity is opposed to the employment of a drug of unknown composition, Citizen Minister is solicited not to authorise Jeudy de l'Hommande to make the proposed experiments in the military hospitals." The inventor felt hurt, and his sense of injustice found expression: "I do not wish to threaten you, Citizen Minister, but mark you it is never prudent to drive to extremes a man who feels insulted and who has reason to be so because, &c., &c." But the Conseil de Santé remained obdurate, and the inventor could only turn in his indignation to the Minister of War, asking [illegible] "If you had a [illegible] [illegible] which was the [illegible] of your livelihood [illegible] [illegible] surrender [illegible] [illegible] a consolatory [illegible] [illegible] [illegible]

IRELAND

(FROM OUR OWN CORRESPONDENT)

MEDICAL OFFICERS AND THE CONDEMNATION OF HOUSES

THE chief discussion at the Conference of Municipal Authorities recently held at Wexford was concerned with the provision of housing by public authorities. In an opening address by the chairman of the conference, Alderman Corish, T D, mayor of Wexford, made some severe criticisms on the alleged failure of medical officers of health to condemn insanitary dwellings The first action necessary, he remarked, was to ask for a report from the medical officer of health These officers were not paid a sufficiently high salary to enable them to live independently of private practice, the result of that being that in a great many cases medical officers had refused to condemn areas obvious to everybody as being slums of the worst kind. To remedy this the services of county medical officers of health should be placed at the disposal of local authorities for the purpose of reporting on areas which the local authorities thought unhealthy The remarks of the chairman were supported by Mr. Forde, commissioner for the town of Trim, who stated that he had great difficulty in getting the medical officer to condemn houses On the other hand, Mr. Hughes, of Dundalk, gave the opinion that medical officers were too careful in their examination of houses. Deputy Corish's suggestion of obtaining the aid of the county medical officers of health is, on the face of it, a good one, although the time of these officers is probably pretty fully occupied with their immediate duties, as few of them have as yet been given adequate skilled assistance It is true that they are in a more independent position than local practitioners, and also they are skilled sanitarians of experience The charge, however, that medical officers are deterred from their duty by fear or favour is an unfair one. If medical officers have not been more active in condemning houses as unfit for human habitation, it is not from fear of giving offence to their patients, but because they know from long experience that no attention would be paid to their advice. Year after year reports condemning houses have been sent in by medical officers, and year after year these reports have been pigeon-holed, and no action has been taken As generous Government grants are now given to local authorities for the building of houses the local authorities have wakened up, and some of their members attempt to make excuses for their previous inertia by throwing blame on their medical officers Mr. Forde's complaint of his own medical officer seemed to depend on a difference of opinion as to what houses should be condemned, and it is conceivable that the medical officer's opinion is as good as the commissioner's At any rate, the matter would have been more fitly dealt with in the board-room at Trim than at a public conference in Wexford.

OUTBREAK OF TYPHOID

Autumn is the season for typhoid infections to spread, and it would seem as if the specially dry summer is going to be followed by more outbreaks than have been usual in recent years. In the Grangegorman Mental Hospital, Dublin, an outbreak involving some 23 patients was reported last week with one death The source had not then been discovered, but full investigations were being made. In recent years Dublin has been relatively free from typhoid fever, although sporadic cases occur An outbreak has also occurred in the Manorhamilton County Home, Co. Leitrim, several of the cases being in the families of officials of the house.

VIENNA

(FROM OUR OWN CORRESPONDENT)

DEATHS IN THE PROFESSION

THE University of Vienna and the Austrian medical profession have had two serious losses by the deaths of Prof. Max Sternberg and Dr Alfred Perutz Sternberg, who was 71 years old, had only recently resigned his position as director of the department for internal diseases at the Wiedner Krankenhaus, the second largest hospital in Vienna, which he had held for over 30 years. Even as a young man he displayed the powers for which he later became famous; the correctness of his clinical diagnoses, said Kundrat the pathologist, is always a source of pleasant surprise to me. He was especially interested in the problems of industrial disease, and was early successful in awaking enthusiasm for social medicine among others He also studied the significance of the reflexes, and contributed numerous papers to the *Archiv fur Anatomie und Physiologie* and the *Zentralblatt fur Physiologie* His researches in the pathology of the heart received wide notice at the time of their publication and are the basis of modern achievements in electrocardiography. Sternberg had been ailing for some time and his death was not unexpected, but Perutz's death at the age of 49 (from embolism after an operation for appendicitis) came as a shock to his many friends He was an excellent student and diagnostician and an inspiring teacher. He turned to medicine after qualifying as a pharmacist, and the double qualification proved very valuable, many dermatological remedies being made up to his prescriptions He published over 80 scientific papers and two well-known books—one on industrial diseases of the skin and another on the general therapy of skin diseases—while his treatise on gonorrhœa of the urethra is also a standard work in Austria

The death is also announced at the age of 65 of Prof. Fernau, who for many years had worked at the Radium Institute, and was connected with several commercial radium undertakings. He had lately become known as an authority on radio biology and radiochemistry It has accidentally been discovered that his body emits a sort of luminosity or fluorescence in the dark which is attributed to an accumulation of radio-active substances A similar condition has been reported in several people whose work brought them into contact with radium, and this time it will be carefully investigated.

THE POPULATION OF VIENNA

Last year there were 12,137 live births in Vienna (6343 boys, 5794 girls), of whom 9455 were born in wedlock and 2682 were illegitimate, the number of stillbirths was 1139 The chief causes of death were · circulatory, 5638, cancer, 3915; respiratory, 2717; nervous system, 2397, tuberculosis, 2142 and alimentary tract, 1304 There were 118 suicides and 1779 attempted suicides, while 165 deaths are attributed to accident or violence Immigrants to the city numbered 155,587 and emigrant 122,443; and all these various comings and go resulted in an increase of 21,809 in the populat

The lists of the Board of Health show 5045 registered medical persons (including public health officers and dental surgeons), 603 of whom are women There were also 1230 unqualified dentists (or dental technicians), 218 veterinary surgeons, 568 qualified midwives, and 170 trained midwives The membership of the compulsory Krankenkassen (excluding civil servants and municipal clerks) stands at 867,441, as against 883,723 a year ago

A FIRST AID SOCIETY

The Wiener freiwillige Rettungsgesellschaft was founded in 1881 after a fire in the municipal theatre in which 584 people lost their lives In 1933 the society's ambulance corps dealt with 2673 street accidents (an average of seven daily), 1727 of these being due to motor cars, 475 to tramcars, 310 to bicycles, and 108 to horse-driven vehicles, while the remaining 53 were caused by railway accidents Of the 2987 cases of suicide and attempted suicide noted above the corps treated 2280 (or six a day), and were able to save 1610 lives Members of the society treated 1474 accidents in factories, and 616 due to sport and athletics They also attended 115 cases of bites by animals, 317 cases of burns, and 741 cases of injuries due to the excessive use of alcohol, and 428 women in labour were conveyed to hospital In all 25,177 people (69 daily) were treated in the year, and of these 8843 had to be taken to hospital All help is given free, and the organisation and methods of the society have served as a model for others

UNITED STATES OF AMERICA

(FROM AN OCCASIONAL CORRESPONDENT)

A GATHERING OF PUBLIC HEALTH AUTHORITIES

A SPECIAL train carried delegates this year from the east coast to the west to attend a joint meeting of the American Public Health Association with its western branch Considering how remote is Pasadena from the centre of population the country was well represented Delegates were also present from Canada and from Mexico

No startling advance was reported in any branch of public health It may be that original research has been curtailed by the cuts to which all health department budgets have been subjected Some excellent work was nevertheless described In the section of epidemiology, for example, Dr Carl F Jordan gave an interesting account of an epidemic of undulant fever from raw milk consumption in Iowa, and Drs James A Crabtree and William Litterer reported from Tennessee an outbreak of milk poisoning that was traced to two cows It was found that in these animals the udders were caked, owing to an infection with a staphylococcus bacteriologically similar to the germ recovered from patients The investigators proved their case by manufacturing toxin from the cows' staphylococci and consuming it themselves in sufficient quantity to reproduce in themselves the typical symptoms of the epidemic

At a luncheon sponsored by the western branch public health administration was discussed by Dr John A Ferrell, of the international health board of the Rockefeller Foundation, and by Dr Walter H Brown, professor of hygiene at Stanford University "Rotating boards,' said Dr Ferrell ' will be needed in State government until the merit system of appointment has been firmly established and the patronage system abandoned After that a cabinet position for the chief executive may be preferable Coördination must be achieved between public health, social welfare, and education It is not so important who directs these coördinated services as it is to see that the director has proper qualifications " Dr Brown, having just returned to America from a world tour, stated that whenever he had found himself in a community well administered in public health, wherever he might be, he had come to know without looking that he was under the British flag He described in some detail the requirements of the public health service in Great Britain, laying stress upon the training required, the security of tenure, and the remuneration for service

Among the scientific exhibits a prominent place was given to one on "public health and eugenics in new Germany" brought from the Deutsches Hygiene Museum at Dresden by Dr Bruno Gebhard One section of this exhibit which shows by electrically lighted models the story of maturation and fertilisation of the germ cells is worthy of the highest praise One suspects that this part is taken from the original museum, and that the remaining wall charts are later accessions designed rather to support a political conviction than to illustrate natural law

Among the resolutions adopted by the general council is one endorsing the campaign for the prevention of congenital syphilis "to the end of securing early health and medical examination of every pregnant woman in which blood examinations, including tests for syphilis, shall be routinely employed" Another favours the adoption of regulations requiring the distribution of dinitrophenol only on the prescription of a practitioner, while yet another recommends that in every industrial State there should be a bureau or division of occupational diseases or industrial hygiene, under the supervision of a physician, empowered to investigate working environment for the control of health hazards and the prevention of industrial disease

The officers elected to serve in 1935 include Dr Walter H Brown as president, Dr J C Geiger (San Francisco) Dr James Roberts (Hamilton, Ontario), and Dr Francisco de P Miranda (Mexico) as first, second, and third vice presidents respectively Next year's meeting will be in Milwaukee, Wisconsin

THE SERVICES

COMMISSIONS IN THE ROYAL ARMY MEDICAL CORPS

THE War Office announces that applications are invited for appointment to commissions in the R A M C Candidates who will be selected without competitive examination will be required to present themselves in London for interview and physical examination on or about Oct 25th Successful candidates will in the first instance be given short service commissions for five years, at the end of which period they may either retire with a gratuity of £1000, or apply for a permanent commission Permanent commissions will be given to officers selected from among those who wish to make the Army their permanent career Further particulars will be found in our advertisement columns

ROYAL NAVAL MEDICAL SERVICE

Surg Lt Comdr J C Foster to *President* for course

Surg Lts H S Marks and H G Wells to rank of Surg Lt Comdr

ROYAL NAVAL VOLUNTEER RESERVE

Surg Lt Comdr R R H Roberts and F D Jenkins to [illegible] W H Carr to [illegible]

Larkworthy to *Pembroke* for R N Hospital. Chatham, for training.

Proby. Surg Lts W F Jones to *Victory* for Haslar Hospital for training, and P. K. Fraser, commission terminated on transfer to R N

Proby Surg Sub-Lt T H. Pierce to be Proby. Surg Lt.

ARMY MEDICAL SERVICES

Col F. D G Howell relinquishes the appt of Dep Dir.-Gen , Army Med Servs , War Office (temp)

The undermentioned appts are made . Col. W P MacArthur from Professor of Tropical Medicine and Consulting Physician to the Army, to be Dep Dir -Gen , Army Med Servs , War Office (*Vide* THE LANCET, June 9th, 1934, p 1247)-Lt -Col J Heatley-Spencer, from R A M C , to be Col

Col H. B. Kelly retires on ret pay.

ROYAL ARMY MEDICAL CORPS

Maj E V Whitby to be Lt -Col

Maj R H Hodges, M C , retires on ret pay.

Short Serv. Commn —The undermentioned Lts (on prob) are confirmed in their rank: W. M E Anderson and H. B Wright

SUPPLEMENTARY RESERVE OF OFFICERS

Capt E J. Fitzgerald, from R A M C., T A , to be Capt.; J. Morgan to be Lt

ARMY DENTAL CORPS

Capt A Rhodes to be Maj

TERRITORIAL ARMY

Lt -Col. A M Johnson, from R.A.M C , to be Col.

Col J. K Lund, having attained the age limit, relinquishes his appointment as A D M S , 42nd (E Lan) Div , and Col A M Johnson, M C , T.D , is appointed A D M S to the Division

Lt -Col. A Leggat, having attained the age limit, retires and retains his rank, with permission to wear the prescribed uniform.

Capt G Sparrow to be Maj

Lt E C Ellis to be Capt

F S M Heggs (late Cadet Sergt , Univ. of London Contgt , Sen Div , O T C) to be Lt

The undermentioned Capts to be Majs . J P J. Jenkins, P Hickey, M H Summers, A H Macklin, O B E , M C , W. B McCall, W J. Roche, K S Roden, G. E Lindsay, M C , W Simpson, A H MacC Eaton, A Badenoch, J. A Fretton, R S Creed, D P Levack, A C Crawford, C P Oliver, A Bremner, M C , and D W. E Burridge

The undermentioned Lts to be Capts : A C. King, C H. Wilson, E G Snaith, J. H B. Livingston, W. C Wilson, J N C Ford, J S Moore, J R Macdonald, R J Ormsby, T E Hastings, M C., J E Crooks, M E D Roberts, J D Pike, W A. Lister, J C. Anderson, C A. Ferguson, J. M Lees, J. M F Whitby, R G Kain, J J Myles, L P Clarke, F R Langmaid, W G Ayres, A G Emslie, J Morrissey, D Macleod, G K Thornton, J. W Galloway, J Charnley, R M Pearce, R H Robinson, J O'Donnell, C A D Mitchell, H S Kent, H F Wattsford, J G McCrie, R S T Sandberg, W M Arnott, J. J McEnery, E Davies-Thomas, R Woodside, E M Wright, J E Flood, E Walsh, A B Pain, E G Gerstenberg, G. H. Thomson, M W Gonin, C J L Wells, J G. McDowell, W C Barber, A J B Miall, R E M Fawcett, T C Williams, J. H Taylor, H. W A. Post, D A. Langhorne, D M Mackenzie, J S. Lindley, F R Bettley, J. V Bradley, L F O'Shaughnessy, B F Longbotham, J R Robertson, J E Morrison, J. C Nicholson, A G W Whitfield, G M. Goodwille, A. MacDonald, E Fowler, R Evans, J. Burns, J H Richmond, G A W Neill, and A H Charles

ROYAL AIR FORCE

The undermentioned are granted short service commissions as Flying Officers for three years on the active list J C. Blair, H. F Harvey, G H Morley, and A W. Callaghan.

Flying Officer W P Griffin is promoted to the rank of Flight Lt.

INDIAN MEDICAL SERVICE

Capt. G D. Rai relinquishes his temp. commn.

DEATHS IN THE SERVICES

The death occurred on Sept. 15th of Lieut -Colonel Winthrop Benjamin Browning, C I E , I M S (retired), who died at Cranford, Exmouth, at the age of 79 He was a son of Benjamin Winthrop Browning of Baggotstown, Co Limerick, and was educated privately and qualified L R C P I , L R C S I , and L M Coombe Hospital, Dublin, in 1879. He entered the Indian Medical Service in 1880, became Surg -Major in 1892 and Lieut Colonel in 1900, and retired in 1910. He had been assistant physician and first physician to Madras General Hospital, second surgeon and first surgeon there, surgeon to Royapettah Hospital, professor of hygiene, materia medica, medical jurisprudence, and surgery at Madras Medical College, surgeon to three successive Governors of Madras, principal of the Madras Medical College, president of board of examiners thereof, and senior medical officer, Madras General Hospital He was created C I E in 1898 He married in 1887 Annie Georgina, eldest daughter of Colonel Kenlis F. Stevenson.

PANEL AND CONTRACT PRACTICE

Placebo Prescribing

Do patients as a rule expect a prescription or a bottle of medicine when they consult a doctor? What is the opinion of the public to-day about the taking of medicine as a remedy for illness? These are important questions from many points of view, not least from the financial aspect when it is observed that the chemists' accounts for insured persons increased from a total of £1,865,123 in 1932 to a total of £1,985,885 in 1933, being an average cost of 2*s* 11½*d* per insured person. All doctors are familiar with the patient's statement that the very first dose did him good, and it would be a foolish man who refused to repeat that mixture. There is the story of the old lady who could not do without her cough mixture and on one occasion when she sent up for it and her doctor was out his wife put an ounce of Camp coffee in the bottle, filled it up with water, and told the messenger that the mixture had been changed. And now the doctor has to keep a stock of this Camp coffee in the dispensary Most practitioners who dispense keep a mixture labelled "ADT" · A for any, T for thing, D for what you like —to be used for people who are thought not to require medicine at all but who would consider themselves neglected if they did not get something Placebo prescriptions for insured persons are not labelled "ADT."

Sir George Newman in his annual report raises this question of unnecessary medicine and its cost. The insured person is entitled to receive and his insurance practitioner is under obligation to prescribe all such medicines as are necessary for treatment, and machinery has been set up to investigate the prescribing of practitioners whose costs appear to be definitely higher than the areal average. The practitioner is first of all interviewed by the regional medical officer, accompanied at request by a member of the panel committee. The R M.O. questions the practitioner about his prescribing and sends him a report as a statement of what took place at the interview which he is asked to correct and sign On this report the Ministry of Health decides if there has been extravagance and if so whether to send a letter of warning or to ask the panel committee to assess the extravagance Last year there were 956 such interviews, as compared with 1024 five years earlier, 12 warning letters were sent and there were 5 references to panel committees with 1 successful appeal In only 4 cases was it found that unnecessary cost had been incurred, as against 45 in 1928 Individual extravagance therefore has gone down but the general cost of prescribing has gone up, and it continues to go up It is argued, Sir George says that this is due to the modern tendency to prescribe expensive drugs, such as insulin and liver extract His reply to this is sound Inasmuch as these drugs are definitely necessary, it becomes more than ever important to see that money which should be available for their cost is not frittered away in placebos In England most practitioners have for generations made up medicines themselves for their working class patients, with the result that they regard a bottle of medicine as the necessary corollary of a visit In Scotland doctors have never dispensed medicines and this, he says, explains why the cost per head of medicine in Scotland is half that in England The difference cannot be explained by the incidence of disease, nor are the end-results worse in Scotland Even in England there are wide variations in places similarly situated For example, in Kingston upon Hull medicine costs 47 392*d* per insured person, in Grimsby only 29 614*d* Of the 20 places at the top of the list 11 are held by county and county boroughs in Lancashire In time of prosperity, Sir George tells us a Lancashire household always had a standing account with its doctor, on which an amount was paid weekly to his collector "They believed in a bottle of medicine and insisted on getting it and paying for it" This habit persists in time of depression when the insurance fund suffers The determining factor in the doctor's view is the fear of offending his patient thereby risking the loss not only of that patient but possibly his family and relatives But whilst cantankerous patients leave Dr A they also leave Dr B and Dr C, so that what Dr A loses in one family he gains in another, and there are Sir George thinks "many doctors who, while courteous and considerate to their patients, do not allow themselves to be swayed unduly by sentiment, and take their rightful position as guide and instructor in medical matters both in the cure of current illness and in the avoidance of similar ills in the future They give or withhold medicine as they see need, and maintain their position in the estimation of the patient by their evident knowledge and assured conviction"

This may be so, but why is it that there is no recognition of this very difficult work when the doctor's remuneration is under discussion? One obvious solution of this prescribing difficulty is to let the patient pay something towards the cost of his medicine The public appreciates what it has to pay for There would be little hardship to the bulk of the insured population if they were asked to pay (say) threepence to the chemist for every prescription handed in Necessitous cases could receive help towards this from the relieving officer This would stop placebo prescribing

OBITUARY

JOHN ALEXANDER MILROY, M D *Edin*

PROFESSOR OF BIOCHEMISTRY QUEEN'S UNIVERSITY BELFAST

Prof John Milroy, whose death took place on Sept 10th after a long illness, was born at Kirkcowan, Wigtownshire, in 1871, and was educated at the Collegiate School and the University of Edinburgh He graduated M A in 1893, M B C M three years later, and in 1902 M D with a gold medal After graduation he went to Owens College Manchester as demonstrator of physiology and from there for two years to Yorkshire College, Leeds returning to Edinburgh as research worker in the chemical section of Sir Edward Sharpey Schafer's department His work on the reduction products of hematin was begun there and continued for a period of about ten years the results being published mainly in the *Journal of Physiology* His work on the metallic compounds of hematoporphyrin appeared in the *Biochemical Journal* In 1902 he was appointed lecturer in physiology in Queen's College Belfast, and in 1909 lecturer in biochemistry, a post which he held until 1922, when he was given the newly founded J C White chair of biochemistry in the university His work covered a very large field and much of it was published under the names of collaborators Of late he had interested himself especially in the development of micro methods for the estimation of glucose in the blood, the determination of pentoses and micro-sublimation methods With his brother, Prof T H Milroy, he collaborated in a text book on Practical Physiological Chemistry which ran through three editions and was used in many medical schools The last edition was almost entirely his own work and is witness to the scrupulous care he took in working out personally all the practical details of the methods described A colleague writes "John Milroy was one of the best loved of teachers, nothing irked him or was beneath his notice He was always ready to offer advice freely when called upon to do so but never obtruded his own opinions He always saw the other fellow's difficulty and no one hesitated to go to him for help Generations of students and graduates who attended his advanced classes will remember him for his devotion to work and his kindly gentle nature"

ROGER SCOTT RICHMOND, B A Camb, M R C S

Dr Roger Richmond, who was killed in falling from a fire escape at St Mary's Hospital Paddington, on Sept 20th, was the youngest of three sons of Dr B A Richmond, regional medical officer for the south western division at the Ministry of Health He was educated at Leighton Park, where he was cricket captain, and at Caius College, Cambridge where he graduated as B A in 1929 He then entered St Mary's Hospital with a scholarship, took the primary F R C S in 1931 and the final conjoint in 1933, remaining at the hospital as resident obstetric officer and recently casualty officer At St Mary's he kept up his high athletic record and was captain this year of the cricket team, which he led to victory in the hospitals cup last July He was one of the best forwards in the Rugby fifteen which won back the cup in March and two years ago he won the inter hospital 440 yards hurdles "In everyday life," writes an associate "Roger Richmond had the charm that comes of ready friendliness The grace he showed in swimming or cricket was also in his manners and he was on easy terms with seniors and juniors alike At his old school he became a link between generations—someone whom all knew and all were glad to know His fine figure his kindness and his gaiety made people feel that this was what a young man should be"

CORRESPONDENCE

THE SIGNIFICANCE OF GLYCOSURIA IN LIFE ASSURANCE

To the Editor of THE LANCET

SIR,—The leading article on the significance of glycosuria in life assurance in your issue of August 18th (p. 365) is based very largely but not entirely upon what was said at discussions before the Assurance (not Insurance) Medical Society at two meetings held in London on Nov 1st, 1933, and Feb. 7th, 1934 Members of this society particularly, and members of the medical profession in general when they have perused the reports to which you call attention, can but warmly approve of and appreciate this endeavour of THE LANCET to give publicity to discussions which, as you truly maintain, are of such great importance and which but for your action would have remained known to a limited number of people.

Alas ! you give me credit for establishing certain very important facts; this credit should be given to three American actuaries who carried out close studies from which the figures quoted by me were drawn and which were published 20, 9, and 3 years ago. These studies proved that there is no reason whatever for the highly alarmist current impression that cases of symptomless glycosuria should be regarded from the insurance and therapeutic points of view as cases of prospective diabetes mellitus. At the time these discussions took place no public medical library in Great Britain possessed a copy of the papers in which these facts are recorded. All that I have done in the matter is to help to make known the existence of these studies to those who are responsible for the erroneous teaching to which I have referred.

My only original contribution to the discussions was to prove from observations carried out on the blood-sugar contents of my own patients and of those of others and upon candidates for life assurance that the curves based upon the blood-sugar analyses, and the levels of renal tolerance of sugar, vary from time to time in the same individual, under observation by the same or by different biochemists, and that these mutations may be spontaneous or may be artefact. In face of these facts, I am anxious to give expression to my objection to your statement that "those who have worked at sugar-tolerance curves believe that patients with a renal glycosuria or with a typical lag curve should be accepted at the usual rates" As sugar curves and renal thresholds are mutable the same advice should be given with regard to cases showing a diabetic curve !

I should like to add that should any reader care to avail himself or herself of one of the few reprints I still possess, and in which certain serious printer's errors have been corrected, I shall be glad to forward one on application.

I am, Sir, yours faithfully,

122, Harley-street, W , Sept 21st H BATTY SHAW.

ERYTHEMA NODOSUM

To the Editor of THE LANCET

SIR,—In the leading article in your last issue you quote Dr Slot's note on erythema nodosum published the week before. May I offer the following criticisms of his paper ? (1) No report of the X ray appearances of his cases was given or the skin reaction to tuberculin, or H S.E. (hæmolytic streptococcal "endotoxin"), or Dick toxin. (2) Erythema nodosum usually clears up, if left alone, in from one to seven days. Hence the injection of serum into four cases without controls is completely valueless and misleading. Besides, theoretically, there is no reason why the ordinary antistreptococcal serum should be of any use In the streptococcal cases which I fully investigated and reported the patients were all definitely negative to the streptococcal exotoxin (Dick toxin) and strongly positive to the endotoxin (better termed "extract," a substance akin to tuberculin) One patient had six attacks of erythema nodosum and was investigated in two She was always negative (before, during, and after attacks, over two years) to tuberculin and Dick toxin, but so sensitive to the hæmolytic streptococcal endotoxin that an attack could be simulated by an injection of this substance

I would willingly, however, give up ever mentioning these rare and comparatively unimportant cases of the streptococcal (wrongly called rheumatic) type, if thereby I could persuade my colleagues of the necessity of regarding every case of erythema nodosum as potentially tuberculous until proved otherwise. In London, when specially working on streptococcal diseases and being in touch with some 700 children suffering from such states, my percentage of streptococcal cases was 29 as opposed to 71 per cent. tuberculous, although I was not working on tuberculosis at the time. Here in Dublin during the last two years I have seen some 20 cases of erythema nodosum, only 1 of which was streptococcal In children I feel entitled to say now, and I am glad to see Dr. Donald Paterson takes the same view, that the majority of cases of erythema nodosum are tuberculous. I would like to state also in connexion with your leading article that I am in almost complete agreement with all the points made by Drs. Forman and Whitwell

I use the sedimentation time (Payne's method) as a routine in my wards and find it a very great assistance when assessing the "activity" of tuberculous and rheumatic disease.

I am, Sir, yours faithfully,

Dublin, Sept 25th W. ROBERT F. COLLIS.

To the Editor of THE LANCET

SIR,—That certain cases of erythema nodosum will clear after the injection of antistreptococcal serum was pointed out a good many years ago by Dr A. H Carter, formerly physician to the Wolverhampton and Staffordshire General (now The Royal) Hospital, Wolverhampton. I have for myself verified the fact that certain cases will clear after the injection of normal horse serum ; whatever serum be used the results in some cases may be rather cataclysmic The fact, pointed out by Dr. Donald Paterson in your last issue, that many patients suffering from this condition give a positive Mantoux reaction, is, of course, well recognised on the Continent It is a further fact within my experience that in certain cases the eruption disappears after a positive reaction to tuberculin has been induced In cases not giving a positive Mantoux reaction it is usual to find a history of sore-throat or of some respiratory infection preceding the appearance of eruption by from two to four weeks. In certain such cases small frequently repeated doses of emulsions of throat organisms appear to expedite the disappearance of the eruption. All these facts taken together seem to indicate that the eruption of erythema nodosum is "allergic" (blessed word) in nature and that the sensitising agent may be either tuberculous, as believed on the Continent, "rheumatic" (another blessed word) as widely believed in this country, or micro organismal This assumption helps to establish some relationship between experience on the Continent and in this country I am, Sir, yours faithfully,

Wolverhampton, Sept 23rd　S C DYKE

ADULT SERUM IN THE CONTROL OF MEASLES

To the Editor of THE LANCET

SIR,—Following the article by Dr A E Gammie and myself in your issue of Sept 1st (p 507), I have received inquiries with regard to the length of time elapsing between the attack of measles and the blood donation The particulars are as follows —

Rover Scout No	Date of birth	Date of attack of measles	Date of blood donation
1	28/11/1914	Jan , 1920	Jan , 1934
2	12/3/1911	Nov , 1918	Jan , 1934
3	3/3/1916	Aug , 1918	Jan , 1934
4	27/4/1910	1915 & 1916	Feb , 1934
5	29/12/1908	1915	Feb , 1934
6	10/11/1911	1919	Feb , 1934

Dr R A O'Brien tells me that several authorities have asked the Wellcome Physiological Research Laboratories to prepare serum, and that the laboratories are willing to cooperate with medical officers of health who wish to organise a plan for the collection and distribution of adult serum

I am, Sir, yours faithfully,

ELWIN H T NASH,

Medical Officer of Health and School Medical Officer
Heston and Isleworth

Hounslow, Sept 21st

THE UREA-CLEARANCE TEST

To the Editor of THE LANCET

SIR,—Previous tests involving the administration of various substances which a presumably damaged kidney was expected to excrete were open to the criticism that their superimposition of unnatural conditions upon a pathological state was liable to obscure the view of the clinician , even the sudden administration of large quantities of urea does not occur in nature Dr Hinden's technique in the urea clearance test avoids this objection, and without doubt approaches the ideal However, the test described by Drs McClure and Stewart, and referred to by them in your last issue, has the advantages of greater simplicity, less psychical disturbance for the patient (which is important), and further gives not a static but a kinematic picture of what the kidney is doing I have for the past three years used a comparison of the excretion rate in the urine of diastase with the excretion rate of water, and found it to answer well for clinical purposes However McClure and Stewart have shown that the laboratory work is unnecessary, and my opinion is that the test deserves to be more widely used

I am, Sir, yours faithfully

GAVIN A DUNLOP

Clinical Laboratory Victoria Hospital, Worksop
Sept. 23rd

SOUTHPORT INFIRMARY —Last week Mr J J Cockstott opened a number of extensions and improvements at this hospital They include new X ray and massage departments in more convenient positions a large casualty department, with operating table and a recovery room, a new dermatological department, and a new surgical consulting room

BOARD OF CONTROL

ANNUAL REPORT

AN increase of 1401 in the number of persons received in hospitals for mental disorder, and an increase of 4871 of mental defectives under care, is recorded in the twentieth annual report of the Board of Control issued to-day [1] As regards mental disorders the recovery rate was 33 per cent , 20 per cent were discharged relieved, 5 per cent unimproved Only five mental hospitals admitted no voluntary patients, though 34 admitted no temporary patients The use made of the new facilities shows marked variations at six hospitals over 35 per cent of admissions were voluntary, headed by 55 per cent at Cardiff , at Derby borough 42 per cent of the admissions were of temporary patients Less than 55 per cent of the admissions at Portsmouth and Ipswich were of certified cases In the registered hospitals the average number of certified admissions was 38 per cent , at the licensed houses 45 per cent

Of the 9000 deaths 108 were due to enteric infections, 151 from influenza, and 77 from violence (including suicide) , 8 per cent of the deaths were due to tuberculosis, but wide variations exist in its incidence in the hospitals The occurrence of typhoid, dysentery, and severe diarrhœa has shown little alteration over the last ten years , the Board question whether delay in making cultures may not be responsible for the non detection of dysentery-carriers

339 patients are resident in houses for single care , only eight of these were received on the voluntary basis Over 15,000 certified patients are resident in public assistance and municipal hospitals

The report deals at some length with *occupational therapy,* a form of treatment which is used very extensively in some, far less so in other hospitals Its efficacy in retarding deterioration is undoubted This form of therapy is now being developed in the wards themselves, and not, as formerly, relegated to a far-off pavilion in the grounds In some places real efforts are being made to find for each patient the occupation best fitted to his needs , in others there is still a tendency to regard the kind of work done as immaterial so long as the patient is not idle Training in occupational work is now becoming an integral part of the mental nurses' studies

Trained *social workers* are established at several hospitals The Board survey the services which can usefully be rendered by these workers , the fact that they are available to supervise recently discharged cases may, it is hoped, lead to more discharges and thus lead to a better use of available accommodation Experiments in boarding-out cases have been made in East Suffolk, where suitable homes have been found, relieving hospital congestion as well as providing a home atmosphere for patients who are likely to do well outside the institution

The provision of *out patient treatment* continues to show great variations in different districts , 85 general hospitals are now in association with 67 mental hospitals, exclusive of the County of London ; 23 of the 100 county and borough mental hospitals are still without any such link In some out patient clinics the provision for attendances per patient seems inadequate Only four of them hold a session more than once a week ; in some attendance is only once a month or by arrangement Tribute is pa to the excellence of the work in 12 centres. Some small areas, such as the Isle of Wight, seem to be doing as much as far larger boroughs. In these 12 centres the average of seven attendances per patient (16,075 attendances) is satisfactory At Oxford and Cardiff the work of Dr. T S. Good and Dr E. Goodall, who founded these clinics in 1917 and 1920 respectively, has been instrumental in providing really early treatment, and a child guidance clinic is also provided at Oxford where the Board draw attention to the proportionate decrease in mental illness, compared with the area's increased population.

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[1] H M Stationery Office 1s

MENTAL DEFICIENCY

A gradual decline is noted in the numbers of mental defectives sent by poor-law authorities to institutional care Ascertainment has led to an increase of 4094 known defectives, but this only gives a figure of 2 65 per 1000, as compared with the Wood Committee estimate of 4 52 (excluding children between 7 and 16), 234 fewer children were notified by local education authorities, a matter of some concern. Over 2000 new beds for defectives, representing a 15 per cent increase, have been provided during the period under review, but colony accommodation remains an urgent need, leading to trouble and disturbance in the homes and milieu of those who cannot be so received There is little demand for increase in approved homes where the annual charges are from £100 to £200

Considerable attention is given by the Commissioners to the means whereby defectives not in institutions can be adequately dealt with Home visiting is gradually being supplemented by practical facilities for training, recreation, and employment Considerable development of the social work is necessary, 186 more defectives were placed upon licence, 251 in guardianship, and 2186 more (or 6 per cent.) under statutory supervision Examples of what has been achieved in this way is given 186 day centres are now in use. Great discrepancies are reported in the efforts made to cope with the problem of mental defectives in different areas For example, Leeds and Sheffield are cities of similar size, 358 defectives are on the register at Leeds, only 25 at Sheffield

Inquiries into the number and type of defectives were carried out in 11 mental hospitals, 14 per cent of the population of these hospitals were found to be true defectives, 12 2 per cent were found to be fit for transfer elsewhere If these hospitals could be taken as a fair sample it would appear that over 20 000 defectives are at present living in mental hospitals, of whom 7000 would be suitable for allocation to colonies, 8000 to public assistance hospitals, and 6000 should remain in mental hospitals 56 per cent of those fully investigated were feeble-minded, 44 per cent idiots and imbeciles The figures showed interesting comparison with the general population While 50 per cent of the ordinary population are under 30, as many as 70 per cent of the idiots in this survey were under 30. On the other hand, the feeble-minded appear to die less early than the general population, 48 per cent of the feeble-minded covered by these inquiries were over 40, compared with 35 per cent of the general population

Attention is also given in the report to the subject of *deficiency and crime* Only 897 persons of the 1½ millions found guilty in the last triennial period were found to be certifiable as defective Whether this number represents all who might have been so certified seems doubtful; the report does not discuss this point About 10 per cent of the newly certified defectives in each year came under consideration because of crime; 34 per cent of these had been previously ascertained (this figure is definitely rising), only 3 per cent were placed at once under guardianship. Far the largest discrepancy between indictable offences committed by normal as compared with defective persons are offences against the person (normals, 4 4, defectives 31 9). Of the 232 making up this number, 210 were sexual offences.

A survey of the 51 communications summarising research in progress in mental hospitals concludes the report.

MEDICAL NEWS

London Hospital

The Schorstein memorial lecture will be delivered by Sir Farquhar Buzzard, regius professor of medicine in the University of Oxford, at 4 30 P M, on Thursday, Oct 18th, in the medical college.

Pharmaceutical Society of Great Britain

The ninety-third session of the school will be opened on Wednesday, Oct. 3rd, at 3 P M, when Mr George Barger, F R.S, professor of chemistry in relation to medicine in the University of Edinburgh, will deliver the inaugural address.

British Red Cross Society's Clinic for Rheumatism

A course of lectures on rheumatism which will be given every other Thursday till Dec 13th, at 8 30 P M, at this clinic (Peto-place, Marylebone-road, N W), is to begin on Oct 18th All the lecturers are members of the honorary visiting staff and all inquiries about the lectures should be addressed to Dr M B Ray at the clinic The lectures will be resumed on Jan 3rd

Institute of Medical Psychology

This institute has issued the programme of a post graduate course in psycho-therapeutic theory and method The main course, covering a year's work, will begin on Oct 1st, and is arranged for two groups. those who can give only three hours twice a week, and those who can give a minimum of 12 hours in the week There will be a five weeks' introductory course of lectures which may be taken separately by medical practitioners. Lectures on sectional lines have also been arranged for doctors, nurses, and educational and social workers. One such course, on psychology and modern problems, will begin on Oct 23rd, and the lecturers will include Prof C G Seligman, F R S, Dr. Emanuel Miller, Prof J C Flugel, and Dr H Crichton-Miller A ten weeks' course, open only to members of the medical profession, which will deal with psycho-physical adaptation, will be given by Dr Crichton-Miller and Dr Cedric Shaw from April 24th onwards Further particulars of these courses may be had from the honorary lecture secretary at the institute, Malet-place, W C 1

Public Health Lectures

A series of lectures on the prevention of disease is being delivered under the joint auspices of the Royal Institute of Public Health and the Institute of Hygiene in the lecture hall of the Institute of Hygiene, 28, Portland place, London, W, on Wednesdays, at 3 30 P M, until Dec 12th They are open to all who are interested health problems The lecturers are Dr W J O'Donovan (industrial skin diseases), Dr. Wilfred Pearson (disease in infancy), Sir Pendrill Varrier-Jones, Dr Henry Yellowlees, Mr Aleck Bourne, Dr R Scott Stevenson, Mr W E Tanner, Dr D M Connan, Mr Michael Smyth, Sir Stanley Woodwark, Mr Percival Cole, and Dr Alfred Cox

The Harben lectures of the Royal Institute of Public Health will be delivered at 23, Queen-square, W C, on Oct 8th, 9th, and 10th, at 4 P M, by Dr. W J Tulloch, professor of bacteriology in the University of St Andrews He has chosen as his subject the diagnosis of small and the investigation of vaccinia by laboratory methods No ticket is required for admission

ADDRESSES AND ORIGINAL ARTICLES

GEE'S DISEASE *

By T Izod Bennett, M D, F R C P Lond

PHYSICIAN WITH CHARGE OF OUT PATIENTS MIDDLESEX HOSPITAL

Two years ago a young girl was admitted to the Middlesex Hospital The first thing noticeable was the great deformity of her bones, the legs were bowed and there was considerable displacement at both knee-joints The lower epiphyses, particularly those of the radii, were notably enlarged The ribs were beaded The mother said that all her life this child had suffered from a tendency of her bones to bend or break She was 17 years of age when admitted to hospital and all her life had never been able to run, although at times she had been able to walk When she was 2 years old her left humerus bent one night in bed, at the age of 3 she was said to have rickets At the age of 14 osteotomies had been performed on both femora and the legs were straightened, but they bent at once as soon as she started to walk again Several times she broke bones but they mended very quickly Her mother said that she thought that she was better in recent years because her bones tended to break instead of merely bending

The next striking thing about this patient was that her abdomen was very distended All her life this had been so, when she was a baby she had had frequent attacks of diarrhœa with very large and offensive stools, but after the age of 5 she never had diarrhœa although the stools remained large and pale The abdomen gradually became more distended until, when she was in hospital this was most noticeable

Another thing apparent about the patient was that the fingers and toes were clubbed and a further point was that she was pale and evidently *anæmic* *She said that sometimes she got cramps in her arms and legs and whenever she was examined Chvostek's sign was found to be positive Last year this patient died of a macrocytic anæmia of pernicious type*

The case therefore exhibits four main features (1) bony deformities resulting from imperfect calcification, amounting to osteomalacia, (2) steatorrhœa, (3) latent tetany, and (4) a tendency to develop severe and dangerous anæmia

In London and in the southern counties of England, and perhaps in Paris as well it is probably true to say to day that abnormalities of bony development such as adolescent rickets are seldom, and osteomalacia never, due to defective diet only

The student of modern medicine seeing a patient with bony deformities such as those which have just been described tends immediately to suspect the presence of hyperparathyroidism, because that remarkable disease has created so much interest throughout the medical world In reality a case of bony deformity beginning in a young person is not likely to arise from hyperparathyroidism and the two diseases most important in this respect are renal insufficiency and Gee's disease

Characteristics of the Disease

In 1888 Samuel Gee physician to St Bartholomew's Hospital, gave the first accurate description of what he called "the coeliac affection" a diarrhœal disease chiefly affecting children but sometimes seen in adults very chronic in nature and tending to be accompanied by a failure of growth and characterised by large pale stools containing much fat Knowledge of this disease has been increased by numerous observers in many countries It is usually recognised as a disease of young children but may not infrequently be encountered in adolescents and adults A few years ago Donald Hunter, Janet Vaughan, and I were able to collect and make full study of 15 cases of this disease, all of them in patients over 15 years of age, and since the publication of these observations I have encountered several others All have certain outstanding symptoms and signs of which the most prominent are (1) steatorrhœa, sometimes causing diarrhœa, (2) anæmia of various types, (3) tetany, either acute or latent, and (4) infantilism with bony changes varying from late rickets to true osteomalacia

STEATORRHŒA

In nearly every case a history may be obtained of chronic diarrhœa recurring frequently during early childhood and perhaps still existing in adult life, but when the disease has been present for many years it is more likely that the stools will no longer be frequent although they will remain conspicuous by their size and pallor Chemical examination will then show that fat, in the form of fatty acids and soaps, is present in the fæces in large amounts The reason why diarrhœa disappears although steatorrhœa persists is that in the course of time these cases develop a dilatation of the colon which slows the passage of the fæces and permits of fuller absorption of water In some of the early cases the stools are conspicuous by their gassy nature, and it is probable that the dilatation of the colon is to a large extent produced by the bulk of the fæcal material and the distension caused by gas production Attention has been called to dilatation of the colon present in the case first quoted X ray examination showed large coils of colon which, when injected with barium, was found to contain 3½ litres without discomfort to the patient Although this dilatation of the colon abolishes the diarrhœa, steatorrhœa persists Table I shows the chemical analysis of seven cases on a diet somewhat low in fat but not completely fat-free, and *it will be seen that nearly half of the dried fæces are composed of this material and further, that it is nearly all in the form of split fat, suggesting that the action of the pancreas is not seriously at fault*

TABLE I —*Analysis of Fæces in Seven Cases*

Case No	Total fat	Unsoaped fat	Neutral fat	Free fatty acid	Combined fatty acid
1	63·9	30·8	2·1	27·9	33·1
2	56·2	19·9	7·2	12·7	36·3
3	61·1	22·0	5·8	16·2	39·1
4	50·7	31·6	4·7	26·9	19·1
5	57·5	33·6	21·3	12·3	23·9
6	60·4	51·8	42·2	9·6	8·6
7	68·3	41·7	7·0	34·7	26·6

Certain writers, particularly Bramwell have believed that these cases are essentially examples of pancreatic deficiency whilst others such as Cheadle have thought that the liver is the organ at fault Neither of these hypotheses is accepted to day and the general belief is that the fundamental error is one of absorption rather than of lack of secretion by any of the alimentary glands Another group of workers has maintained that in these cases fat is absorbed by the intestine but is subsequently re-excreted from the blood into the colon. The evidence for this theory is chiefly that even on a starvation diet there remains a large amount of fat in the fæces and, therefore, re-excretion must be at work Against this theory must be taken the important observations of Sperry and Bloor who have shown that in normal animals there is almost as much fat in the fæces on a fat-free diet as on one containing fat, and that the nature of the various fractions is similar under the two conditions At the present time the theory of non-absorption appears to be the most probable explanation of the steatorrhœa in Gee's disease

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* A lecture delivered at the Hôpital Claude Bernard Paris, in June 1934
5797

ANÆMIA

Nearly all these cases show some degree of anæmia and many of them show it in extreme degree, so that the pallor of protected surfaces contrasts with the tanning which follows exposure to the sun. The anæmia that may occur is of at least three varieties .—

(1) A *hypochromic anæmia,* in which the number of red cells may be normal and the hæmoglobin diminished, or both elements may be reduced, but the hæmoglobin is always more reduced than the number of red cells. Thaysen found hypochromic anæmia in 20 out of 29 patients, and Whipple and others have found this type of anæmia similarly common Of my own cases it has been conspicuous in only two. This type of anæmia responds well to the administration of large doses of iron

(2) A *megalocytic hyperchromic anæmia,* in which there is a notable diminution both in the number of red cells and in the percentage of hæmoglobin, but this reduction is greater as regards the cells than in the latter element. Megalocytes appear sometimes in large numbers, and in the case quoted at the beginning of this paper this anæmia appeared so suddenly and with such severity as to cause death Usually this anæmia can be treated successfully either by large doses of yeast extract (Marmite) or by liver extract The appearances of the blood are closely similar to those of true Addisonian pernicious anæmia, but differ in that poikilocytosis is less marked, and the indirect van den Bergh reaction is low, and further, the patients differ in that they often show free hydrochloric acid in the gastric secretion and can be cured by the administration of marmite; this is seldom if ever the case with true pernicious anæmia

(3) *Erythroblastic anæmia*—In two of my cases there was present a severe anæmia with great reduction of the hæmoglobin and enormous numbers of nucleated red blood-cells which were present in one case in the proportion of 200 per 100 leucocytes. In addition both megalocytes and microcytes were present although the colour-index was very low This blood picture closely resembles that described by Cooley in America in certain severe anæmias in children of Mediterranean stock. Our cases were of purely English stock, but presented a curious triangular shaped head, with high forehead, prominent malar bones, and widely set eyes very suggestive of the appearances of the children described by Cooley.

These cases resembled the other patients observed by Hunter, Vaughan, and the writer in that they had steatorrhœa, osteoporosis, and latent tetany.

TETANY

The case described at the beginning of this paper exhibited latent tetany as shown by the presence of Chvostek's sign, and several of the patients in the series described by Hunter, Vaughan, and myself came under observation on account of acute tetany with carpopedal spasm. More than one of them had been obliged to give up work on account of the persistence and severity of this symptom; one, a teacher of the piano, had found herself entirely unable to follow her occupation, another case, more recently under my observation, gave a vivid description of attacks in which she was unable to move her hands, swallowing became painful and difficult, and even vision was obscured until calcium was administered by her medical attendant.

For such reasons examples of Gee's disease are not infrequently encountered in neurological clinics where the tetany is being investigated, and sometimes the other manifestations of the disease are overlooked. In such cases the presence of chronic steatorrhœa and the prominence of the abdomen will supply evidence as to the origin of the tetany, and close examination will usually reveal changes in the skeletal system such as are present in practically all cases of Gee's disease

The great Trousseau mentions chronic diarrhœa as a cause of tetany, but the first report of the association of fatty stools and tetany in an adult appears to be that of Sonner in 1877. Since that time this association has been noted by a number of observers, and Langmead in 1911 published extensive observations on such cases, making particular note of the extreme distension of the colon which occurs in many of them Lichtenstein, Blumgart, and Holmes and Starr must be quoted amongst other observers who have paid attention to this condition Table II shows the manifestation of tetany in my own cases, and it will be seen that in all cases it was associated with reduction of the serum calcium. These calcium figures are average figures from a large number of observations in each case, and it may be said that hypocalcæmia, often of severe degree, is one of the most outstanding biochemical features of Gee's disease.

TABLE II —*Tetany in Relation to Serum Calcium*

Case No.	History of acute tetany.	Chvostek sign.	Trousseau sign.	Serum calcium.
1	+	+	—	8·6
2	—	+	—	8·7
3	—	+	—	8·0
4	—	—	—	9·8
5	+	—	—	9·0
6	—	+	—	9·0
7	+	+	+	7·5

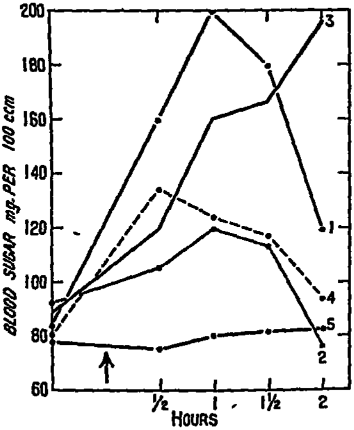
INFANTILISM, RICKETS, AND OSTEOMALACIA

In his original description of "the cœliac affection" Gee noted the interference with growth that occurs in children with this disease, but the first description of osteoporosis and the occurrence of fractures appears to be that of McCrudden and Fales in 1912 Subsequently, Parsons, Miller, and other English observers emphasised the occurrence of rachitic changes in children, the former particularly having given a full description of the condition, including the beneficial therapeutic effects of vitamin D. Holst first recorded the occurrence of severe bone changes amongst examples of this disease in adults, and similar cases were reported by Linder and Harris and by Thaysen.

All the adolescent and adult cases seen by the writer have exhibited osteoporosis, many have first come under observation on account of adolescent rickets, and stunting of growth is almost invariable. In a few instances the softening of bone was of such degree as to constitute true osteomalacia, and it is perhaps notable that this was most marked in the oldest patient in the series.

This was a woman now aged 60, who has had attacks of severe diarrhœa at intervals during practically the whole of her life At the age of 12 her legs were bowed, and this and other deformities have increased and still tend to occur at the present time At the age of 34 she married and later became pregnant and was very ill, the pregnancy terminating in miscarriage after three months She is very poor and *during the last ten years there have been times when insufficient food has increased the severity of* her general disease X ray photographs demonstrate the severity of the osteoporosis in her case, the pictures of the pelvis being typical of the contracted pelvis of osteomalacia so often described and so seldom explained by gynæcologists

Information as to the calcification of the bones in these cases is best obtained if radiograms are taken to show the bones of the patient and the bones of a control healthy patient of the same age and build photographed simultaneously on the same film In this manner the decalcified bones of the patient with Gee's disease are clearly demonstrated



Glucose-tolerance curves (1) from a case of pancreatic insufficiency (carcinoma of the pancreas), (2) from a case of pernicious anæmia with chronic diarrhœa, (3) from a case of amœbic dysentery with severe diarrhœa (4) from a case of chronic pancreatitis, and (5) from a case of tropical sprue Glucose (50 g) was given by mouth at the point indicated by the arrow

Metabolic Observations

Description has already been given of some of the interesting biochemical features of this group of cases It has been seen that the absorption of fat is seriously at fault, but there is evidence that the disturbance of metabolism involves many other substances Thaysen, to whom we owe much of our knowledge of this disease, was the first to report that in many cases the administration of glucose is not followed by the usual increase of sugar in the blood If one gives 50 grammes of glucose to one of these patients when fasting, the analysis of samples *of blood taken* at half-hourly intervals afterwards will usually reveal no increase in the sugar content of the blood, but a "flat curve" if such an expression is permissible, very different from any ordinary result either in health or disease

Two possible explanations suggest themselves for this result (*a*) that sugar is absorbed much more slowly than in any ordinary person, or (*b*) that sugar is removed from the blood by the liver with extreme rapidity There seems to be little to support the latter theory, and most observers are of opinion that this phenomenon demonstrates interference with the absorption of sugar similar to that which we have already observed in the case of fats It is seen in about 80 per cent of established cases and I know of no other disease in which it is to be found except tropical sprue My investigation of this phenomenon in cases of steatorrhœa from pancreatitis both benign and malignant, and similar observations on cases of pernicious anæmia with severe diarrhœa, and also on cases of dysentery, has not revealed the flat blood-sugar curve It would therefore seem that neither diarrhœa nor steatorrhœa can explain it

Protein metabolism is not so obviously disturbed The matter is one more difficult to investigate, and Herter, Lehndorff, Maunner, and others have reported diminished nitrogen metabolism with a high nitrogen content in the fæces It can certainly be said that the blood-urea is never high and that it is sometimes rather low in these cases, but beyond this nothing definite can be said at the present time

Calcium

With reference to the tetany so often met with it has been stated that these cases, and indeed all cases of Gee's disease, usually show a low serum calcium Herter, who was one of the first to study these problems, was certainly the first to call attention to the excessive loss of calcium in the fæces in the form of soaps He and many observers since have estimated the calcium balance in such patients, and have demonstrated that there is a very large loss of calcium in the fæces and a very small output in the urine The loss of calcium in the fæces seems to run parallel with the loss of fat Whether these two deficiencies are inter related or whether there is a simple failure of absorption in both cases has not yet been proved The theory that calcium is absorbed and subsequently re-excreted into the colon does not, however, appear tenable

What has been said of calcium applies in a large measure to phosphorus Biochemical methods at the present time are not sufficiently perfected to enable us to speak with the same certainty regarding phosphorus as we can with regard to calcium, but the evidence is that the phosphorus in the blood is low and that this is associated with phosphorus loss via the alimentary canal

The Nature of Gee's Disease

Leaving these laboratory details we are confronted with the problem of the exact pathology of Gee's disease In the first place it must be admitted that the findings at autopsy throw little light upon the mystery The wall of the small intestine and of the colon is usually thin and atrophic, the pancreas and liver do not appear to be grossly diseased, and no disease of other internal organs has yet been established The bones show the changes of rickets or osteomalacia, they are often so soft that they can be cut with a blunt knife and are of the consistency of Gruyère cheese, but these facts must be considered as effects rather than as causes

We are driven to the study of somewhat analogous diseases in order to reach a conception of the pathology of the present one It cannot be said that there is any real evidence to suggest that disease, or functional derangement, of the parathyroid apparatus is present in these cases

Table III sets out the main features of hyperparathyroidism and hypoparathyroidism as compared with Gee's disease and it at once becomes manifest that the low serum calcium of the latter condition contrasts markedly with the hypercalcæmia of cases of parathyroid tumour whilst the absence of changes in the bones and the normal alimentary function is conditions of hypoparathyroidism are entirely different from the state of affairs in Gee's disease.

Consideration of the steatorrhœa, of the peculiar glucose-tolerance curve, of the frequent presence of achlorhydria, of the hypocalcæmia, and of the various types of anæmia found in Gee's disease lead to the conclusion that this must be a nutritional disturbance of intestinal origin in spite of the failure of the pathologists at the present day to demonstrate specific anatomical lesions.

TABLE III.—*Comparison of Gee's Disease with Parathyroid Excess and Deficiency*

—	Hypopara-thyroidism.	Gee's disease.	Hyperpara-thyroidism.
Serum calcium	Low.	Low	High.
Plasma phosphorus	High.	Variable.	Low.
Urinary calcium	Low.	Low.	High.
Bone changes	Nil	Marked	Very marked.
Alimentary function	Normal.	Deranged	Normal.
Tetany	Present.	Frequent.	Absent.

The diseases most closely analogous to Gee's disease are probably that group of anæmias in which achylia gastrica is the basis. True Addisonian pernicious anæmia is the chief member of this group, with microcytic anæmia and the anæmia of gastro-colic fistula as rarer and more ill-defined members. In these diseases we often find gastro-intestinal disturbance sometimes with diarrhœa, although seldom with steatorrhœa; we find anæmias of varying severity and a bodily disturbance which is widespread, although hypocalcæmia and such effects as osteoporosis and tetany are practically never described.

In the tropical disease known as sprue a great many features are found practically identical with Gee's disease. In sprue we encounter steatorrhœa, severe anæmias, often macrocytic in type, hypocalcæmia and tetany in a considerable number of cases, and osteoporosis, although this is somewhat rare and always mild in degree. Gee recognised that his disease closely resembled certain cases of tropical diarrhœa, but made it clear that it occurred in persons who had never left England. The chief distinction between the two conditions lies in the fact that whereas Gee's disease can nearly always be traced to infancy, tropical sprue scarcely ever arises before later years of life There are other points of distinction: the stools in tropical sprue tend to be more fluid and foaming, and are often described as having the consistency of soda-water; extreme soreness of the mouth with superficial ulceration of the tongue and buccal mucous membrane is a very common and outstanding manifestation of sprue and is very rare in Gee's disease. Although the ætiology of sprue remains obscure there are many things pointing to infection as an important factor, whereas in Gee's disease this element does not appear probable.

NON-TROPICAL SPRUE

Many writers, particularly Thaysen, have believed that Gee's disease and sprue are identical, and the disease has been described as "non-tropical sprue." In the 15 cases examined by Hunter, Vaughan, and myself, only one presented any strong evidence as to having arisen later than in early childhood. Since the publication of this series a further most interesting case has come under my observation.

A B , a woman aged 21 (M H Reg No. 53043) —This patient had no diarrhœal disease whatever during infancy She was a normal breast-fed baby, and during the first ten years of her life had whooping-cough, measles, and chicken-pox, but was never seriously ill Growth was good and her attendance at school was never interrupted for longer than a fortnight This story is entirely corroborated by the parents and teachers of the patient

At the age of 14 she began to get attacks of abdominal distension with pale voluminous stools which have continued ever since She very quickly observed that fatty food of any type increased the diarrhœa, and sometimes provoked actual vomiting. Within a year she began to suffer from severe cramps in the hands which made her feel "as if she were holding an electric battery" She went to work as a milliner and the stiffness of her hands would sometimes prevent her from following her occupation. Dr. A. P Bodman of Bristol identified the condition as one of tetany and elicited Trousseau's sign He found the blood calcium very reduced and identified the diarrhœa as being due to steatorrhœa He instituted a low fat diet and with the administration of calcium brought about considerable improvement If she neglected to take her calcium, tetany would affect her so severely that her fingers would stiffen, the thumb would be locked into the palm of her hand, her breath would "seem to go," her eyelids would twitch, and vision would be affected

Under observation in the Middlesex Hospital it was found that the total fat in the dried fæces often exceeded 50 per cent with fractions as given in Table I The long bones showed some osteoporosis, but the epiphyses were united and there was no deformity anywhere. The patient's stature was that of a girl of 15; she was of slight build with dark brown, rather dry hair, and a somewhat, although not very obviously, protuberant abdomen The mouth and tongue were never sore. Menstruation had not begun until the age of 18 years and had always been most irregular, sometimes ceasing for six or nine months

Blood examination showed a severe hypochromic anæmia, the red cells being below four million and the hæmoglobin 34 per cent Poikilocytosis and anisocytosis were marked, there was no macrocytosis and very few nucleated red cells were present. Blood analysis showed reduction of the calcium to 8 mg. per 100 c cm , falling to 6 mg. when calcium administration was stopped Plasma phosphorus 3 2 The Wassermann reaction was negative, the glucose-tolerance curve normal Gastric analysis showed free HCl present in the stomach. There was no gross enlargement of the colon Treatment with a very careful low fat diet, full doses of calcium by mouth and by intramuscular injection, the administration of Blaud's pill in doses of grs 90 daily brought about considerable improvement in the case.

The chief scientific interest of this case is that it seems clearly to support the contention of Thaysen and others that Gee's disease may occasionally arise in patients in Western Europe during adolescence or even in adult life. It must, however, be noted that soreness of the mouth was completely absent in this case and the character of the stools was not like that usually encountered in true sprue

Treatment

Gee's disease calls for prolonged and energetic treatment. The majority of patients will develop severe symptoms unless they are kept on a diet in which the fats are rigidly curtailed. Details of such a diet would be unsuitable here, but it is well to point out that skimmed milk is a very useful ingredient and that ripe bananas are also of great value. If gas-formation is prominent starch must be kept low; the administration of takadiastase in such cases is very valuable.

Indication has already been given in this paper concerning the treatment of the various forms of anæmia. If iron is called for it is best given in the form of massive doses of Blaud's pill, up to grs. 90 daily, or one of the scale preparations of iron in doses of grs. 150 a day may be employed The hypodermic injection of iron preparations is almost without value. If the anæmia is macrocytic in type marmite or yeast extracts may relieve it, but the use of liver extract, or of Campolon by hypodermic injection, will be equally or more effective If the anæmia is of dangerous degree blood transfusion must be employed

Calcium administration is called for in nearly every case About grs 120 of calcium lactate should be given daily as a routine, and if the blood calcium is very low or manifestations of tetany are present this should be increased and a more soluble form of calcium such as the gluconate should be given in addition, by the intramuscular route if necessary Apart from tetany the osteoporosis, which is almost always present in adult cases in some degree calls for massive administration of calcium if further deterioration of the bones is to be prevented

Conclusion

Exception may be taken to the title of this paper Gee himself described the disease as "the cœliac affection," but cœliac disease is now almost universally looked upon as a disease of early infancy, and this name has the further disadvantage of directing attention to only one of the clinical features of the malady "Non tropical sprue" is a title seeming to have even less to commend it, whilst "idiopathic steatorrhœa" will become, it may be hoped, an obsolete description when pathologists have thrown more light on the disease The credit of first recognising the condition must without question be given to Gee The later and independent discoveries of Herter, and the still later publications of Heubner scarcely justify the addition of their names to that of the great physician of St Bartholomew's Hospital

Many of the observations recorded in this paper have been made for me by colleagues in the Courtauld institute of biochemistry and the Bland Sutton institute of pathology at the Middlesex Hospital and to them I wish to express my great indebtedness I must also thank Dr Donald Hunter and Dr Janet Vaughan for permission to reproduce the results of certain investigations which have been carried out sometimes by them alone and sometimes in collaboration with them

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UVEO-PAROTID TUBERCULOSIS

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The association of inflammatory lesions of the uveal tract and of the parotid glands was first recorded by Heerfordt [1] 24 years ago, and since then some fifty papers have been published on the subject The condition appears to be uncommon, but in our previous review [2] we suggested that for various reasons many cases are not recognised Since our paper was published we have met with two further cases which we now report

Most of the patients are in the second and third decades of life, with a slight preponderance of females Premonitory symptoms of various kinds occur in half the cases, none of these being in any way specific Parotitis is constant nearly always bilateral, the swelling being firm, nodular and painless, and subsiding in a period varying from days to months Bilateral uveitis is present in every case, and usually takes the form of iridocyclitis, often with nodules in the iris recognisable as tuberculous and showing a great tendency to the formation of synechiæ and keratitis punctata , the ocular lesions frequently relapse and tend to leave permanent changes which may, rarely, result in blindness Half the patients develop facial palsy, unilateral or bilateral, always followed by recovery Mild pyrexia also occurs in half the cases, and a smaller proportion show polyneuritis, xerostomia, polyuria, lacrymal gland involvement, joint pains, and erythema—often diagnosed as erythema nodosum The condition pursues a chronic course with a marked tendency to spontaneous recovery, the mortality being about 5 per cent Some of the earlier cases were thought to be examples of mumps, but this is untenable in view of the long prodromal period the indolence and painlessness of the parotid swellings the fact that facial palsy may precede the parotitis the absence of orchitis, and the occasional history of previous infection Other suggested causes include syphilis leukæmia and tuberculosis but we showed in our review that all the evidence is in favour of tuberculosis

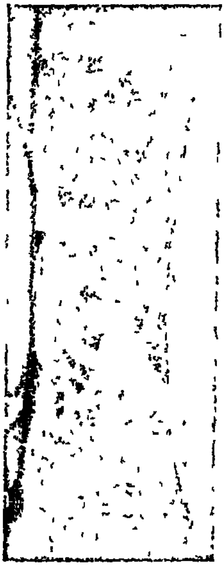

FIG 1 —The tuberculide over the shins in Case 1

as the sole ætiological factor, and suggested that the syndrome should be known as uveo-parotid tuberculosis Microscopically the tuberculosis is of a peculiarly fibrosing and non-caseating type, in which the tubercle bacilli are very scanty and difficult to demonstrate, either by animal inoculation or by histology The chronicity and tendency to spontaneous recovery undoubtedly stand in close relationship to these features. It is a remarkable fact that in two of the four cases which have come to autopsy the myocardium was the seat of a similar fibroid tuberculous process

REPORT OF TWO CASES

CASE 1 —A female, aged 31, was admitted to the Leeds General Infirmary on Nov 8th, 1932, under the care of Prof MacAdam. She was the third child of a family of eight, an elder sister had had tuberculous cervical adenitis at the age of 22, and three had died in childhood from a cause unknown She had been delicate all her life, having suffered from pneumonia, whooping-cough, and bilateral otitis media as a child, she had not had mumps She had always suffered from dysmenorrhœa, and for the past year there had been amenorrhœa She had been slightly deaf in both ears for the past two years The present illness was preceded by an attack of "influenza" in December, 1931, when she was ill for two weeks, there was a similar attack two months later, and a third in April, 1932, after this last attack her previous good health did not return, and she suffered from lassitude, anorexia, and loss of weight On August 16th she noticed pain in the eyes, five days later a painless swelling of the neck developed, and on August 27th a diagnosis of mumps was made The parotid swelling, which was bilateral, subsided about five weeks later, and during this period she complained of severe backache On Sept 16th one side of the face was seen to be drawn over, this being particularly noticeable when she spoke She continued in this condition until Oct 23rd, when she found that she was unable to stand or walk, a few days later she developed weakness of the hands During the course of the illness there had been progressive failure of vision and progressive deafness

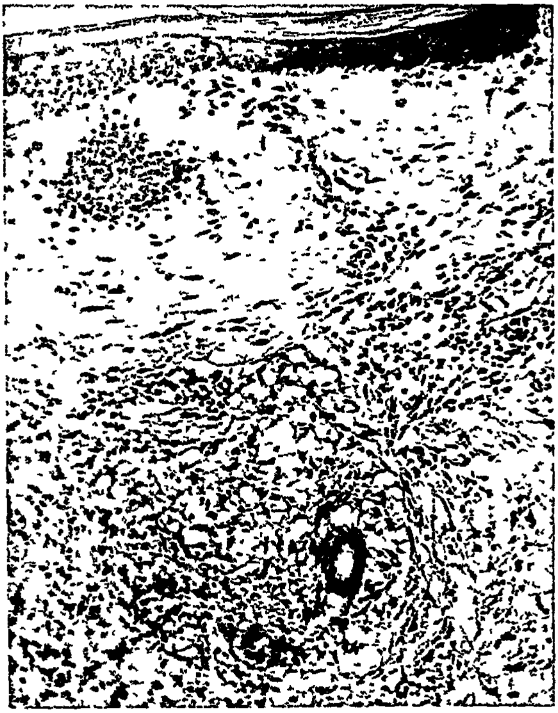

FIG. 2 —Section of one of the lesions in Fig 1 A typical tubercle follicle with giant cell is seen in the corium.

On admission the patient was pale, wasted, apathetic, and obviously very ill The urine contained a few pus cells and excess of acetone bodies The temperature was 99° F , the pulse-rate 140, and the respiration-rate 40 The eyes were examined by Mr J Benson, they showed subacute iritis, and the fundi could not be seen owing to vitreous haze, there was no keratitis punctata, visual acuity was reduced to perception of finger movements The pupils were unequal and fixed, and there was marked conjunctivitis The palpebral apertures were unequal (right larger than left), and there was complete paralysis of the right lower face The ears were examined by Mr W M Munby, who reported bilateral middle-ear deafness and bilateral (incomplete) nerve deafness, a tuning-fork (128) was not heard by air conduction The mouth was extremely dry, and the patient complained of severe thirst Both arms showed almost complete paralysis and loss of muscle tone, all the tendon jerks were absent, and there was marked ataxia of sensory type The legs were not so weak as the arms, though she was unable to raise either leg from the bed, tone was very much reduced, and the tendon jerks were absent. The abdominal reflexes were absent and the plantar responses flexor Pain sensation was impaired over a "glove and stocking" distribution, and vibration sense was impaired at the ankles, position sense in the fingers and toes was very defective There was slight painless enlargement of the parotid glands Over the anterior aspect of both legs below the knees there was an erythematous rash consisting of infiltrated, circular patches about the size of a sixpence (Fig 1), Dr J. T Ingram pronounced this rash as being undoubtedly a tuberculide Radiography revealed some calcified glands in the right iliac fossa, but the only abnormality in the chest was a thickened interlobar septum on the right The blood Wassermann reaction was negative The blood count showed. leucocytes, 5700 (differential count normal), red cells, 5,510,000, hæmoglobin, 96 per cent , colour index, 0 87. Fractional test-meal showed hypochlorhydria with delayed acid secretion and normal emptying rate The von Pirquet test (0 001 mg) was positive Electrocardiography showed nothing abnormal

During the following three weeks she remained extremely ill, there was persistent tachycardia, though the temperature was raised on only three occasions (to 100° F), and there was a tendency to looseness of the bowels After this she began to improve, and at the time of discharge on Dec 3rd there was considerable recovery of power in the limbs, there was still complete anorexia, and there had been no improvement in vision or in hearing The rash had become brown in colour, but before this a biopsy had been performed, a single circular nodule being excised. Part of this material was used for guinea-pig inoculation, but neither of the animals developed tuberculosis The rest was examined microscopically, and showed a typical, active tuberculous lesion of the dermis extending down to the adipose tissue and not undergoing caseation (Fig 2), no tubercle bacilli were seen For various reasons a biopsy was not performed on the iris or the parotid glands, nor was sialography carried out.

She was re-examined at home on April 7th, 1933 The appetite was still poor, the mouth was very dry, there was no return of the menses, and she had not put on any weight, at the same time she felt that she was improving slowly, especially with regard to the nervous manifestations There had been further failure of vision and of hearing The eyes were again examined by Mr Benson, who found posterior synechiæ, the pupils being dilated and fixed (she had been treated with atropine), there was marked ciliary injection and keratitis punctata on the left, the fundi could not be seen. The palpebral apertures were still unequal, and there was slight facial weakness She could not hear a tuning fork by air conduction, and was almost completely deaf. The tongue was not very dry. The limbs were extremely wasted and tone was reduced, but there was a considerable return of power and coördination was not impaired. Position and vibration sense were now normal, and the upper abdominal reflexes had returned. The rash had completely disappeared leaving no scarring

She was readmitted to hospital on July 15th, when the iritis was still active and keratitis punctata was increasing. It was now decided to give her a course of gold therapy, and krysolgan (gr 0 015) was given intravenously on July 22nd with no noticeable general or focal reaction Increasing weekly doses were given and there was no reaction until gr 0 75 was reached, when she complained of vague general symptoms, but from the commencement of the treatment there was a steady improvement of both hearing and vision She was re-examined at home on Sept 1st when she was able to see large objects and could hear a tuning fork (256) by air conduction, there was no facial weakness and the tendon jerks in the arms were obtained with difficulty All the abdominal reflexes were present, as were the knee jerks; there had been one menstrual period, the first for 18 months In October there was a second menstrual period, and she stated that there was an improvement in vision after each injection of krysolgan Keratitis punctata was now well marked in both eyes, the pulse rate was 100, and the ankle jerks were obtained for the first time; she had now received about grs 4 of krysolgan

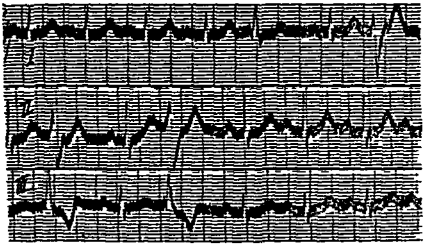

FIG 3—Electrocardiogram showing extrasystoles of right ventricular origin

About the end of November, 1933, her general condition relapsed, and she complained of cough, dyspnœa, and palpitation, she was re-examined and found to have a rapid and very irregular pulse a loud systolic bruit had appeared at the apex, together with another adventitious sound thought to be a friction rub There were no abnormal signs in the lungs The electrocardiogram now showed very numerous extrasystoles of right ventricular origin (Fig 3) and radiographs revealed numerous small infiltrations distributed uniformly throughout both lungs, reported by the radiologist as typical miliary tuberculosis She was admitted to hospital, and for two weeks the temperature was normal, though the pulse rate varied from 84 to 130, usually being irregular At the end of this time there was some general improvement, and the patient returned home She was seen again on several occasions between December, 1933, and June, 1934, during which time her general condition continued to improve and her weight increased from 5 st 7 lb to 7 st At the last examination visual acuity was 6/18 right 6/36 left and keratitis punctata was much less marked, there was no cough but she still complained of dyspnœa and palpitation, the pulse rate was still rapid and slightly irregular Repeated electrocardiographic examination showed persistent but less frequent extrasystoles Radiography demonstrated increase in the density of the shadows but there was no further extension Sialography showed no abnormality of the right parotid duct, and saliva was being secreted freely but in subnormal quantity

CASE 2—For the notes of the second case we are indebted to Mr R S Lawson of Leicester the case being brought to our notice by Dr John Campbell This was a female aged 51 who was seen by Mr Lawson in July, 1931 There was an eight weeks history of swelling of both sides of the neck, that on the left starting a week after the right, left facial palsy came on suddenly after three weeks and then gradually recovered When first seen there had been "inflammation of the left eye" for two or three days and she complained of an unpleasant taste in the mouth There had been no contact with mumps On examination the parotid glands were enlarged, movable, and painless, and there was complete left facial palsy, there was left-sided conjunctivitis with epiphora The Wassermann reaction was negative A biopsy was performed on both parotid glands under general anæsthesia, and the material showed typical tuberculosis histologically, tubercle bacilli could not be found in the sections, however, in spite of the most careful searching She was discharged at the end of July the general condition having improved, with a diagnosis of bilateral tuberculous parotitis She was readmitted a few months later with bilateral iritis, the cause of which was not understood Subsequently, at our request, Mr Lawson was good enough to have the chest and abdomen radiographed and an electrocardiogram taken, the report states that there are "changes in the chest affecting principally the right upper and middle zones, together with considerable mediastinal adenitis and opacities are present in the right sacral region suggestive of calcified glands" The electrocardiogram showed no abnormality Mr Lawson kindly sent us the sections made from the parotids, and Prof M J Stewart reports on them as follows *Left parotid* the portion of the gland excised shows an advanced tuberculous lesion throughout All the gland lobules are similarly affected, the lesion consisting of innumerable well formed tubercle follicles with large, typical giant cells, and a small amount of peripheral lymphocytic infiltration Central necrosis is conspicuously lacking Tubercles are also present in the walls of the ducts, the lumina of which are free from involvement (Fig 4) No tubercle bacilli are seen in appropriately stained sections A few tubercles are also seen in the fibrous septa but for the most part these are not invaded although they appear to be rather wider than normal The glandular acini are widely separated by the tuberculous infiltration, and a few of them are filled with homogeneous pink-stained material There is no appreciable increase of collagen within the substance of the gland lobules The tuberculous lesion is recent and active *Right parotid* this shows an exactly comparable lesion at apparently the same stage of development Again there are only one or two small tubercles present in the septa, and the vessels and nerves running therein are unaffected

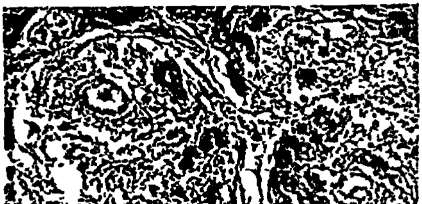

FIG 4—Section from left parotid in Case 2 showing numerous tubercle follicles breaking up the glandular tissue

We have communicated with this patient and she reports that she is now normal in every way

COMMENTARY

These are two typical examples of uveo parotid tuberculosis Case 1 shows several points of interest In the first place she developed the most severe polyneuritis so far recorded in this syndrome and she was further remarkable for the bilateral nerve deafness, which was probably of neuritic origin an integral part of the polyneuritis This polyneuritis was so generalised and severe that it dominated the clinical picture, and we can well understand how Macbride,[3] in reporting a similar case, ventured to call the condition uveo-parotitic paralysis. Our analysis of the reported cases, however, clearly demonstrated that this is not a common accompaniment of the syndrome We have no doubt that the cause of the polyneuritis in this case was the tuberculous toxin circulating in the blood ; all the usual causes of polyneuritis could be excluded, and the case demonstrates that polyneuritis can result from tuberculous infection in cases other than those in the last stages of consumption, a fact which is not yet generally accepted We do not suggest that there was actual bacillary infection of the nerves, but believe that the neuritis was of purely toxic origin as are, according to modern views, many of the skin tuberculides such as the one occurring in this case. As far as we know nerve deafness has only been recorded once before [3] The marked general disturbances in this patient fall into line with the extensive polyneuritis, the two being manifestations of a profound tuberculous toxæmia, and although the focal parotid lesion was not notable the uveitis was very severe.

There is no doubt that towards the end of November, 1933, the patient developed myocardial disease, evidenced by dyspnœa and palpitation associated with tachycardia, frequent ventricular extrasystoles, and an apical systolic bruit. In view of the autopsy finding of extensive myocardial tuberculosis in two previous cases,[2] we venture to suggest that the myocardial lesion in this case is also of tuberculous origin. In our previous paper we suggested that tuberculous myocarditis might occur in this disease without producing gross physical signs and, further, that it might be followed by recovery , we believe this to be such a case. Coincident with this, pulmonary infiltration occurred in lungs previously clear, and must be regarded as tuberculous

The second case showed no unusual features, and went on to complete recovery ; again the tuberculous nature is undoubted because of the radiological evidence and the histology of the affected parotids. We would emphasise that the microscopical appearances of the biopsy material in both these cases are identical with those we have previously studied—namely, our own first case [2] and those of Dorrell [4] and Souter [5]

We should like to refer to a case of this condition which was reported by Mohn [6] about the time our first paper appeared.

> This was a female, aged 28, who had had mumps as a child, had suffered from erythema nodosum for ten years, and in whose family there was a strong history of tuberculosis. She was admitted to hospital as a case of tuberculous peritonitis, but four days later she developed bilateral facial palsy and, after three weeks, bilateral enlargement of the parotid and lacrymal glands The cerebro-spinal fluid showed a slight increase in the cell content After another week bilateral deafness and other neurological signs developed, including weakness of the limbs, loss of tone, diminution of the tendon jerks, and Rombergism, and about the same time there was bilateral uveitis with photophobia and failure of visual acuity, corneal opacity, and iris nodules. The parotid and lacrymal swellings subsided but the cervical and submaxillary glands became enlarged. She was febrile for one month, and while the paresis improved the uveitis increased The von Pirquet test was positive. During the course of the illness an area of infiltration appeared in the left upper lobe, said to be characteristically tuberculous; for this reason no attempt was made to produce a focal reaction to tuberculin.

Mohn considered this case—which is in every way typical of uveo-parotitis with polyneuritis and strikingly similar to our own first case (above)—to be of tuberculous origin

In conclusion, we would suggest that this condition is not very uncommon, and in further support of this we have heard of three more recent cases, one seen by Dr. Esmond Rees, of Cardiff (in which there was evidence of healed pulmonary tuberculosis as well as a tuberculide), another by Dr. S. E Tanner, of Leicester, and a third by Dr. John Stough, of Chicago (a male with uveitis, parotitis, facial palsy, rash on the legs, and pulmonary tuberculosis) Our first case suggests that intravenous gold therapy should be tried in all cases for the prevention of permanent ocular damage, if for no other reason.

We wish to express our thanks to Prof. W MacAdam, who has kindly allowed us to investigate and publish his case ; to Mr. R. S Lawson, who not only provided us with the notes and slides of his case but also carried out a number of special investigations at our suggestion ; and to Prof. M. J. Stewart for the histological report.

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UVEO-PAROTITIS POLYNEURITICA

REPORT OF A CASE

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UVEO-PAROTITIS polyneuritica (febris uveo-parotidea of Heerfordt) is an uncommon syndrome characterised by inflammatory lesions of the uveal tract of the eye, enlargement of the parotid glands, facial palsy (commonly unilateral, but occasionally bilateral), and fever. The syndrome may occur at any age (commonest in young adults and slightly commoner in females) Frequently there is a short prodromal period in which skin rashes may appear. In spite of the name given by Heerfordt, fever is not essential, many cases being apyrexial The eye changes, parotitis, and facial palsy may occur in any order, and evidence of a polyneuritis may also occur in occasional cases with paræsthesiæ and absent tendon reflexes. Cases have occasionally been reported with an increase of large hyaline cells in the blood [6 10 13]

Heerfordt [8] first described the condition in 1909, reporting three cases and referring to two others on record.[4 5] Brewerton [3] in 1910 was the first to report a case in England, and was followed by Mackay [11] (1917) Since Heerfordt's description isolated cases were reported, chiefly from continental countries where the syndrome seems to have attracted more attention (Lehmann,[12] Leeksma [11]). Maitland Ramsay [15] in 1921 reported a case in a female, aged 31, with a prodromal œdema and erythema on the legs followed by iridocyclitis, bilateral enlargement of the parotid glands, and bilateral facial palsy This patient also suffered from intercostal neuralgia, nasal voice, and dysphagia In the following year Fielding and Venner [6] reported a similar case with erythema of the skin and loss of knee- and ankle-jerks Parker [17] in 1926 reported one case and reviewed the literature, which was again reviewed in 1931 by Merrill and Oaks,[16] who also reported a case Lehmann,[12] who llowed up Heerfordt's original cases, suggested that ne condition might be tuberculous Bang[1] is stated o have recorded a fatal case of uveo-parotitis which ied of miliary tuberculosis but in his paper two cases re described and I can discover no record of the eath of either Berg[2] agrees with the suggestion hat the condition is tuberculous An atypical fatal case vas reported by Rogers and Bodman[16] in 1926, but no utopsy was performed Souter[19] in 1929 recorded fatal case which died of miliary tuberculosis Last ear Garland and Thomson,[7] in describing a typical ase in which death was due to miliary tuberculosis, ollected further evidence to support the tuberculous rigin of the syndrome, and suggested the name " uveo parotid tuberculosis "

The syndrome has a low mortality, and the parotitis and facial palsy always recover, although the parotid gland may remain enlarged for a considerable time The earlier authorities considered the prognosis of the eye condition favourable, although Heerfordt[8] and Maitland Ramsay[15] both recorded cases in which optic atrophy occurred, and permanent impairment of vision may occur The case now reported has progressed to almost complete blindness, and if a tuberculosis origin is accepted the prognosis with regard to the eye condition should be guarded

Jackson[9] in 1925 recorded a case treated by deep X ray therapy to the parotid gland, but as the parotitis and facial palsy subside spontaneously they do not require specific treatment The eye condition should be treated as tuberculous iritis

The present case is reported in support of the tuberculosis origin of the syndrome, being a typical case of uveo parotitis

CASE REPORT

Miss A , a typist aged 25, was admitted to St Thomas's Hospital in December, 1932, complaining of mistiness of vision Her family history disclosed nothing relevant, and her past personal history showed that she had had measles and chicken pox in her infancy and mumps at the age of 7 Tonsillectomy was performed when she was 11 From the age of 13 to 23 she frequently suffered from boils on the face Three weeks before admission she noticed swelling of the legs below the knees accompanied by a diffuse pink discoloration of the swollen parts She rested in bed for one week and the swelling and discoloration of the legs subsided and she returned to work A week before admission she developed an acute rhinitis, necessitating rest in bed Six days before admission she noticed that her vision was becoming dim and misty There had been no other symptoms except *amenorrhœa* for two months before she came into hospital

On admission on Dec 29th, 1932, the temperature was 99° F , the pulse rate 92 per minute, and the respiration-rate 20 Vision R V =6/6; L V =6/12 Examination of the eyes showed circumcorneal and conjunctival injection of both eyes with slight photophobia There was no epiphora and no keratitis punctata The fundi and optic discs were normal In the chest there were fine crepitations at the apex of the right lung but no other abnormal physical signs Radiography of the chest revealed no abnormality and these crepitations were thought to be of no significance All other systems were normal

She ran a remittent pyrexia varying between 98 2° F. (morning) and 101° F (evening), and all attempts to discover a cause for it failed Further clinical and radiographic examination of the chest gave no help and radiography of the nasal sinuses also showed nothing unusual The urine was normal, being sterile on culture A blood culture in February 1933, grew *Staphylococcus aureus* but this was undoubtedly a contamination and subsequent cultures were sterile The Wassermann reaction was negative

Five weeks after admission she complained of pain in the left ear and developed a left facial palsy of the lower motor neurone type Examination of the ears disclosed nothing abnormal At this time the knee jerks were noticed to be absent Three weeks later bilateral enlargement of the parotid glands commenced the left being larger than the right, both glands were tender, firm, and non fluctuant, as in mumps This diagnosis, however, was very unlikely since she was very definite that she had had mumps at the age of 7 The evening pyrexia continued and so did the left lower motor facial palsy, but apart from absent knee jerks no other abnormal physical signs could be discovered At this stage, radiographic examination of the chest and nasal sinuses was again undertaken with negative results Radiographic examination of the teeth was also normal and a barium enema followed by radiographic examination of the colon and appendix showed nothing abnormal A blood count on March 30th, 1933, was as follows —

Red cells	5,210 000	Polymorphs	60 %
White cells	6 800	Large lymphocytes	14 %
Hæmoglobin	89 %	Small	8 %
Colour-index	0 86	Large hyaline	18 %

A lumbar puncture (March 28th) showed the cerebro spinal fluid under normal pressure, clear, no coagulum, protein 60 mg per 100 c cm , slight excess of globulin, cells 2 5 per c cm (all lymphocytes) Chlorides 740 mg per 100 c cm Lange curve normal Wassermann reaction negative

Fifteen weeks after admission the pyrexia still continued, the circumcorneal and conjunctival injection persisted in both eyes, which showed haziness of the iris with irregular pupils , vision was poor and photophobia slight The bilateral enlargement of the parotid gland had almost subsided and the left facial palsy had cleared up The knee jerks were still absent She was discharged in April, 1933, to rest in the country In May she was readmitted for ten days, when the vision was poor (R V =counts fingers at 1 metre, L V =hand movement perceptible at 1 metre) The pupils were irregular, and there was circumcorneal injection and keratitis punctata No abnormal physical signs were found in the chest, but radiography showed fine mottling of the small ring type diffusely throughout the lung field Dr G T Hebert informs me that he attributes this type of X ray appearance to inflammation around the smaller bronchioles (he has shown films of a similar nature at meetings of the Tuberculosis Association) and that they may later subside Amenorrhœa still persisted but Mr J M Wyatt found nothing abnormal in the pelvic organs

By arrangement with Dr G MacDonald, tuberculosis officer for Battersea, the patient received a course of injections of tuberculin (bacillary emulsion) She was then transferred to Whitstable and Tankerton Hospital, under the care of Dr J E Saville where the course was continued I am indebted to Dr MacDonald and Dr Saville for their kindness in furnishing particulars of the case whilst under their care

In May, 1934, she was readmitted to St Thomas's Hospital Pyrexia was absent, vision was poor, hand movements only being perceptible at 1 metre, circumcorneal and conjunctival infection persisted The aqueous fluid in the anterior chamber of the eye was slightly opaque The pupils were irregular and iris very hazy Four large patches of yellow exudate were present on each iris, giving a typical picture of tuberculous iritis. The parotid glands were still slightly enlarged behind the angle of the jaw, but there was no evidence of a facial palsy The knee jerks had returned Clinical examination of the chest showed no abnormality, but on radiographic examination fine mottling still persisted Amenorrhœa was still present

SUMMARY

The case reported is typical of the syndrome known as uveo parotitis polyneuritica The patient is a young adult female with prodromal skin rash iridocyclitis, bilateral parotitis and unilateral facial palsy both subsiding spontaneously and evidence of peripheral neuritis A blood count showed a considerable increase of hyaline cells In the early stage it was impossible from examination of the eyes to suggest a definite cause for the iridocyclitis but the subsequent progression to a typical tuberculous iridocycli[illegible] strongly supports the suggestion that the syndrome is tuberculous in origin.

I am indebted to Sir Maurice Cassidy and Mr. A. C. Hudson for encouragement and permission to report this case, which was admitted to St. Thomas's Hospital under their care, and to Dr. Geoffrey Fildes for radiographic examinations.

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UVEO-PAROTITIS

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"UVEO-PAROTITIS is a definite clinical entity, characterised by bilateral uveitis and parotitis, pursuing a chronic course with a well-marked tendency to spontaneous recovery "[1] It was first described in 1909 by Heerfordt,[2] who termed it "febris uveo-parotidea " and considered that it was a complication of mumps. This contention has been definitely rejected by numerous observers Macbride[3] described it as uveo-parotitic paralysis, to stress the commonly associated facial palsy, and recently Garland and Thomson [1] have entered a strong plea that it should be known as uveo-parotid tuberculosis, so convinced are they that tubercle is the ætiological factor. Although they have built up a strong case to substantiate their judgment, it remains very difficult to harmonise certain features of the disease with this assumption, and a more guarded suggestion may legitimately be advanced Reference will be made to this later.

In preparing this note I have permitted myself to draw freely upon the facts given in Garland and Thomson's admirable article They have analysed 47 cases : of these, 62 per cent were under the age of 30, with extremes of 7 and 59, of which the majority were females The disease presents the following features, which suggest as pecific infection rather than tuberculosis.

The *prodromal symptoms* may take the form of malaise, lassitude, gastro-intestinal disturbances, skin eruptions of the type of erythema nodosum, pyrexia, joint pains, paræsthesiæ, cough, night sweats, or in the case of two sufferers I have seen, failure of accommodation when reading

The *parotitis* is usually bilateral The glands are rarely painful but tender to the touch, while suppuration never occurs With this may be associated enlargement of the lacrymal glands and submaxillary salivary glands, together with a generalised adenitis and splenomegaly.

The *facial palsy* is often, but not constantly, present, and may be unilateral, either preceding, or more usually following, the parotid enlargement.

The *pyrexia* is inconstant, and more commonly a prodromal symptom ; but it may recur or persist in a low-grade degree for a long period

The *uveitis* is insidious and painless in its onset, while one eye only may be affected It is characterised by the production of a typically adhesive exudate, readily producing posterior synechiæ of considerable strength and permanency There are profuse and coarse deposits on the back of the cornea, while the vitreous may contain numerous opacities The iritis may take the alternative form of nodular deposits The gravity of this iritis will be readily appreciated when it is realised that the adhesions between the pupillary margin and lens capsule may be so complete as to produce a secondary glaucoma—a not very uncommon complication in untreated cases

Laboratory investigations, apart from the histological picture of tuberculosis, are negative.

The present case is reported because of the extreme diversity of the neuritic signs which alone must give rise to hesitancy in the acceptance of the tuberculous theory. I am indebted to Mr Rupert Scott for his kindness in allowing me to quote the notes of this case.

CASE REPORT

The patient, a man aged 27, first came under observation in April, 1932, with a history of three weeks' misty vision and focusing defect, together with enlarged glands behind the angles of the jaw Examination revealed slight ciliary injection of left eye, together with keratitis punctata (K P) The pupils were semi-dilated, but reacted briskly to light and sluggishly to accommodation There was cycloplegia of the left eye The V.R = 6/6, V.L = 6/6 Both parotids were painlessly enlarged. A mydriatic was ordered for both eyes

Two weeks afterwards left facial palsy developed, and this was followed a week later by a similar palsy on the right He complained of sensations like " pins and needles " over the middle, ring, and little fingers of the right hand, and over the right shin The slit lamp showed a few K P. in the right eye, numerous K P in the left, with hazy media The fundi were normal except for engorgement of the veins Two weeks later he complained of hoarseness of the voice and pain down the right leg, together with weakness of the leg He was found to have weakness of the palatal muscles on the right side, the right vocal cord fixed and abducted , and the right knee- and ankle-jerks absent

These nervous phenomena disappeared in the space of a few weeks, except the facial palsy, which can still be detected on the right side, although it has very markedly improved as the result of electrical treatment Five months later R V = 6/60, L V. = 6/6 He had by this time discontinued the use of the mydriatic to the left eye, so as to enable him to resume work, while the right vision gradually improved up to 6/12 , but this improvement was not maintained. At the present time the left eye is quiet and, except for a few fine posterior synechiæ (which formed after the discontinuance of the mydriatic), shows no sign of inflammation, except for an occasional tendency to ciliary flushing V L = 6/5 The right eye still shows some K P , together with slight ciliary injection The pupil is evenly dilated, but the vitreous is markedly opaque, with the result that the vision has not improved beyond 6/60 A small nodule is still palpable behind the angle of the left jaw

The Wassermann reaction and examination of the blood were negative

ÆTIOLOGY

Garland and Thomson base their contention upon the following evidence :—

1. Post-mortem findings of miliary tubercle and tuberculous deposits in the heart, as reported by four observers.

2 Biopsies with histological evidence of tuberculosis . (*a*) iris, four observers , (*b*) bulba conjunctiva, one observer ; (*c*) parotid, five observers.

3 Iris nodules, five observers

4 Focal reaction to tuberculin, two observers
5 Tuberculosis of lung with positive sputum, one observer

"That is to say," in their opinion, "in more than one third of recorded cases, we have incontrovertible evidence of tuberculous infection" But in spite of this somewhat imposing mass of evidence there are certain facts which are difficult to reconcile with this hypothesis

1 *Pathological*—The tubercle bacillus has never been demonstrated by any investigator in histological sections prepared from iris, parotid, or lymphatic glands This is possibly explained by the absence of caseating lesions Cavara,[4] having injected infected material into the anterior chambers of rabbits' eyes, failed to produce a similar lesion, while as the result of the injection of similar material into the peritoneal cavity of three guinea pigs, only one died subsequently with tuberculous post mortem findings

2 *Eye condition*—Except in those cases where nodules were found in the iris characteristic of tubercle, syphilis, or leprosy (the last two having been said to be excluded), the course of the eye lesion is not characteristic of tuberculous disease of the eye Unless sight is spoiled by the development of secondary glaucoma, the general tendency is for good recovery of function, while this is not the general experience of tuberculous disease of the eye

3 *Nervous lesions*—The phenomenon of the facial palsy preceding the parotid enlargement is explained by Garland and Thomson as being in all probability due to pressure by the deep portion of the gland upon the facial nerve as it leaves the stylomastoid foramen, general glandular enlargement being inappreciable This is probably not the explanation, in view of the case reported by Mohn [5] in 1933, where the lesion was localised somewhere between the geniculate ganglion and the branching off of the chorda tympani that is, in the bone itself, thus excluding pressure from the parotid, which, moreover, was not yet enlarged (The focal diagnosis was based on the undoubted peripheral site of the paralysis and on the simultaneous disappearance of the sense of taste on the anterior two thirds of the tongue) The neuritic manifestations would therefore appear to be produced by some circulating toxin, which is not a feature of tuberculosis

Syphilis, beri-beri, pseudo leukæmia, diphtheria, atypical Mikulicz's disease, have all been suggested and in their turn dismissed, while Critchley and Phillips,[6] although advocating a further search for the tubercle bacillus, considered that the weight of evidence pointed to some specific virus, or agent, as yet unknown

Thus it will be readily seen that although there are features common alike to uveo parotitis and tuberculosis, yet the composite picture of the signs of uveo parotitis bears but a slight resemblance to tuberculosis While there appears to be a special tendency towards systemic tubercle amongst those exhibiting the uveo parotitic syndrome, there is a significant omission in the vast literature of tuberculosis of reference to these manifestations

Weve [7] perhaps adopts the wisest attitude in considering that it would become more certain that we are dealing not with tuberculosis but with an unknown ætiological agent, which from the tubercle-like histological findings can be termed para-tuberculosis It is significant that cases are not infrequently met with where there is no suggestion of latent tubercle, either on clinical grounds or on the family history and of the half dozen cases that I have had the opportunity of seeing only in one was there a possible tuberculous taint I would therefore suggest that in view of these conflicting facts the designation of uveo parotid tuberculosis is at this stage unjustified

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MIKULICZ SYNDROME IN ASSOCIATION WITH TUBERCULOSIS

REPORT OF A CASE

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IN 1888 Mikulicz [1] first described a condition of painless bilateral swelling of the salivary and lacrymal glands associated with little, if any, constitutional change He considered it to be a true disease entity attributable to chronic infection from some source Subsequently further cases were added to the literature Many of these accorded closely with the original description, but others exhibited the clinical picture as part only of some other general disease, in some cases only certain of the glands were involved Thus "Mikulicz syndrome" became recognised as a separate entity from Mikulicz disease Certain writers doubted even the existence of a separate disease, and maintained the condition was in all cases purely a syndrome which might occur in the course of a number of general diseases Howard [2] stated that all gradations from that of involvement of one or more salivary glands, through the typical picture of Mikulicz disease, to a fully developed lymphatic leukæmia might be observed Various writers reported cases showing this syndrome in the presence of a syphilitic infection, lymphadenoma, lymphosarcoma, uveo parotid fever, gout, and tuberculosis Various classifications were suggested, the chief being perhaps those of V Brunn,[3] Howard, and Thursfield [4] The first mentioned divides the cases into two main groups dependent on the presence or not of an alteration in the blood picture The possible associated involvement of the spleen and lymphatic glands accounted for a subdivision of the first group into two Thursfield, who gives a very full review of the whole subject up to 1913, suggested the following classification —

1 A congenital, hereditary, or familial affection
2 Mikulicz disease with involvement of the lymphatic apparatus
3 Mikulicz disease proper
4 Leukæmia
5 Tuberculosis
6 Syphilis
7 Gout.
8 Sialodochitis fibrinosa

A later and rather similar, but fuller, classification was offered by Schaffer and Jacobsen [5]

The syndrome has also been noted in connexion with Erb's juvenile dystrophy, Graves's disease paralysis agitans and dementia præcox It seems possible that in these cases the association was coincidental

It is obvious from the preceding remarks that the subject of Mikulicz disease or syndrome is a very wide one. The pathology of the condition, the prognosis, and the treatment is that, in the case of associated disease, of the particular disease itself. A word may be said in regard to the group of cases which accord with that originally described by Mikulicz. The histological picture in those cases where a gland has been removed has been that of extensive fibrosis, with the general characteristics of a chronic inflammatory process. The progress of the disease appears to be benign, and to have no direct effect on longevity Symptoms are few and restricted to some dryness of the mouth and eyes The æsthetic factor is the most important in many cases Various observers (Krailsheimer,[6] Thursfield) have noted that a coincidental infection—e g, pneumonia or erysipelas—may result in a diminution in size or even disappearance of the swollen glands. In some cases surgical removal of one gland has led to a similar result in the remaining gland Irradiation of the affected glands has been employed by certain observers. A complete report of this procedure has recently been published by Leucutia and Price,[7] and reference should be made to the fact that in addition to valuable information on this special point, this particular contribution includes an excellent survey of the whole question of Mikulicz disease and syndrome Amongst other observations it was found that the response to radiation depended largely on the histological picture presented Thus all types exhibiting lymphocytic infiltration, whether of inflammatory or neoplastic origin, showed a satisfactory response to irradiation therapy. Good results were obtained in cases of Mikulicz disease proper, and in cases of Mikulicz syndrome in which the causative factor was tuberculosis, lymphosarcoma, leukæmia, and lymphadenoma. It was also pointed out that the administration of arsenic and iodides during treatment is of some value.

A CASE RECORD

Tuberculosis has already been referred to as an ætiological factor in the production of Mikulicz syndrome A careful survey of what has been written on the subject shows that this particular association is rare. It was felt, therefore, that it would be valuable to place on record the occurrence of a case exhibiting many factors strongly suggestive of such an association.

The patient, a male aged 18, was first seen by me in 1931 and has been under observation at intervals since that time He gave a 12 months' history of painless bilateral swelling of the face, first noticed under the jaw and later at the sides of the face For many years he had been subject to recurrent skin trouble on his back This occurred as crops of nodular lesions which tended to break down, leaving shallow ulcers which finally healed as shallow punched-out scars From the age of 12 the sight of the left eye had been poor, or, as he said in his own words, "there seems to be a spot in the centre—I can see all round it" He complained of some dyspnœa on exertion but there was no history of cough, night sweats, or loss of weight, and the general health was good It was elicited that six years previously he attended the local tuberculosis clinic Below is given an extract of his notes at that time and subsequently. (I am indebted to Dr Howell Williams and his assistant, Dr G Prosser Evans for this courtesy.)

He originally attended in 1927, complaining of a cough, but no abnormal physical signs were noted In 1928 there was a history of pleurisy, and examination showed consolidation of the left upper lobe and the right base. A curious pemplugus was noted over the upper scapular regions The sputum was negative for tubercle bacilli. In 1931 swollen glands were observed in the neck. The von Pirquet test was repeatedly negative, and the Wassermann reaction was also negative. In 1932 the glandular condition was unchanged, but apart from some dyspnœa on exertion he felt quite well. Examination showed some flattening of both apices with whispering pectoriloquy over the right upper lobe accompanied by post-tussive crepitations. The radiological appearances suggested in the right upper zone the presence of a definite tuberculous lesion, probably quiescent and fibrotic in nature The appearances of the left second quarter were definitely suspicious, and there was evidence of probable old-standing pleurisy at the left base

Examination—A well-nourished, intelligent boy, showing bilateral enlargement of both parotid and submaxillary glands, no tenderness and no overlying redness; lacrymal glands not involved but cervical glands enlarged on either side, axillary and inguinal glands not enlarged, teeth and tonsils healthy The spleen was definitely enlarged and mobile The pupillary reactions were normal Patches of choroido-retinitis were seen in both fundi to the outer side of each disc and examination showed a central scotoma in the left visual field Mr. Frank Thomas examined this case, and in his opinion the lesions were those of healed tuberculosis The findings in the chest accorded with those given above Over the whole of the cutaneous area extending from the shoulders to the buttocks and on both legs numerous roughly circular, shallow scars were seen, they varied in size from a threepenny piece to a two-shilling piece, the edges were sharply defined and the bases parchment-like. The appearances presented accorded closely with those seen in a papulonecrotic tuberculide No abnormality of the cardiovascular system or further abnormality of the nervous system was noted

Special Investigations (for which I am indebted to Dr A. F. Sladden)—The blood Wassermann reaction was negative Biopsy of a cervical gland showed chronic lymphadenitis with much fibrosis, but no evidence of caseation or of tubercle bacilli and no evidence of malignancy. The blood count (1931) showed:

Red cells . .	4,136,000	Polymorphs . .	50%
White cells	18,800	Lymphocytes .	41%
Hæmoglobin	74%	Monocytes . ..	7·5%
		Eosinophils ..	1·5%

The patient was last seen in May, 1932, when a very marked general improvement was noted The most striking feature was the almost complete disappearance of the enlargement of the salivary glands The cervical glands were still enlarged, and also glands in the mastoid and occipital group A new feature was the presence on both legs of purpuric lesions, which, he stated, had appeared in crops during the previous months They gave rise to no constitutional disturbance. The remaining clinical features showed no change. A further blood count (1933) showed:

Red cells .. .	4,808,000	Polymorphs .. .	64·5%
White cells ..	12,000	Lymphocytes	24·5%
Hæmoglobin .	60%	Monocytes	10·5%
Platelets ..	480,000	Eosinophils .	0·5%

It is to be specially noted that no form of treatment was instituted during the period he was under observation

DISCUSSION

It may be pointed out after a careful study of the above report that the existence of a definite tuberculous ætiology has not been established Admittedly it has not been possible to demonstrate the presence of the tubercle bacillus in any one lesion. On the other hand, I think it is fair to say that, taken together, the various features presented offer very strong reason for the suggestion that tuberculosis is in fact the primary causal factor in this case. Reference will be made later to this particular point.

As has already been pointed out, this association of tuberculosis with Mikulicz syndrome is apparently rare, and very few cases have been hitherto recorded. In 1910 Igersheimer and Pollot,[8] after an exhaustive survey, found records of only three authentic cases of tuberculous origin, and were finally of opinion that this particular disease was very rarely a causal actor In the three cases referred to, tubercle bacilli vere identified in excised gland tissue In recent years Preston and Jeafferson [9] have reported a case ssociated with pulmonary tuberculosis bacilli being lemonstrated in the sputum Leucutia and Price,[7] n a very excellent survey of irradiation treatment of Iikulicz disease and syndrome, refer to two further ases again associated with established pulmonary uberculosis In one case only is the fact noted that he sputum was positive, although in the second a gland biopsy showed the presence of "typical tuberculous granuloma" These writers were of opinion hat tuberculosis is more commonly an ætiological actor in the disease under consideration than is generally accepted Apart from these cases there are others in which, although the tubercle bacillus has not been demonstrated, the clinical findings elsewhere leave little room for doubt in regard to the etiology Thus Marsh [10] and Griffith [11] each reported ases in which miliary tubercle formation was dentified microscopically in excised gland tissue The case reported by the first mentioned is of particular interest in relation to the present contribution since in this case, too, cutaneous lesions were present These lesions consisted of freely movable ubcutaneous tumours, showing no tendency to aseation and presenting, histologically, miliary ubercle formation The only other case report in which associated cutaneous lesions of possible tuberculous ætiology are recorded is that of Plate and Lewandowsky [12] The eruption occurred on the lower imbs and resembled erythema nodosum This is of nterest in view of recent observations on the suggested etiology of this skin condition

Recently a valuable contribution to the literature has been made by Garland and Thomson [13] The clinical features of their case resemble in many ways those of the case described above Quite apart from this, the work of these writers strongly suggests that two conditions previously regarded as separate and distinct examples of Mikulicz syndrome—i e tuberculous parotitis and uveo parotid fever—are in fact one and the same thing For this reason it is necessary to briefly consider certain features presented in this paper

Uveo parotid fever or uveo parotitis has usually been included in the group of diseases classified as Mikulicz syndrome Garland and Thomson report one case, with post mortem details and review the published records very fully Clinically, apart from the swelling of the salivary glands, the main feature in uveo parotid fever is a lesion of the uveal tract, iridocyclitis being by far the commonest Facial palsy is also a not uncommon accompaniment It is interesting to note from this survey that pyrexia was by no means a constant finding The autopsy details in their own case showed miliary tubercle formation in the salivary glands, the liver, lungs, kidneys, heart, and uterus but no caseation was seen, and no tubercle bacilli were demonstrated They lay particular emphasis on this question of the absence of the features normally observed in tuberculous lesions elsewhere—i e , caseation and presence of tubercle bacilli They point out that the type of tuberculosis found in these cases is of an endothelial fibrosing type, and that caseation is absent and tubercle bacilli not found To support this they refer to the fact that in all cases of uveo-parotid fever in which biopsies have been performed the histological features are fully in accord with the findings as set out above As an explanation it is suggested that the infection is of low virulence, or that the resistance of the patient is unusually good In conclusion they affirm that uveo-parotid fever is always tuberculous in origin, and suggest as a more appropriate name ' uveo parotid tuberculosis.'

The case at present reported seems clinically to resemble very closely the picture as described by Garland and Thomson, and seems also to fall into the group of "uveo parotid tuberculosis" The repeatedly negative Pirquet test is interesting in view of the statment made by Hart [14] that in the presence of certain cutaneous conditions suspected to be tuberculous, the presence of a negative response tends to support, rather than negative the diagnosis The subsidence of the gland swelling without any treatment and the healed appearance of the lungs, as shown by radiography, suggest the infection was a mild self-limited one—a feature, as pointed out above, very constantly seen in uveo parotid tuberculosis The uveal lesion is interesting in view of its rarity Iritis or iridocyclitis is more common than choroiditis Splenomegaly is present in this case but is uncommon, although Hamburger and Schaffer[15] report one case

SUMMARY

A case of Mikulicz syndrome is reported which clinically appears to be of tuberculous ætiology, and which, it is suggested, may be classified as a case of uveo-parotid tuberculosis Certain unusual features are the site of the uveal lesion and the presence of an associated skin condition The suggestion that the tuberculous infection in these cases is of a benign type is supported by the progress noted in this case

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THE BORDERLINE OF DENTAL SURGERY

By R Kennon, M D Liverp , F R C S Eng
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A CLOSE association with the dental profession may fall to the lot of any surgeon and bring with it a group of interesting problems, such as the sore tongue, hæmorrhage from a socket, facial paralysis and dislocation of the jaw.

SORE TONGUE

The sore tongue may vary from pain and a [illegible] sensation without gross pathology to [illegible] ulcerative stomatitis. The smaller the pa[illegible] lesion, the more interesting the case. The [illegible] with a sore tongue is either using the tong[illegible] or too little. By using the tongue too [illegible] the hysterical search for non-exis[illegible] (dyspepsia, cancer). One young girl [illegible] her tongue revealed the epiglottis, [illegible] is needed for this in a normal person. [illegible] the patient discovers the circumva[illegible] on the lateral border of the ton[illegible] exfoliation and fears they indi[illegible] because there has been a case [illegible]

Pain follows the discovery of these normal structures and so functional disease is established With the help of a large mirror the patient should be made to localise the pain and swelling. The mirror is then used on a friend and the normality of the area demonstrated, explaining that with a few weeks' practice the friend would be able to show the papillæ more easily and be rewarded by pain. The demonstration over, all use of *the mirror is forbidden* for a fortnight, by which time the tired muscles have usually recovered and cease to cause pain.

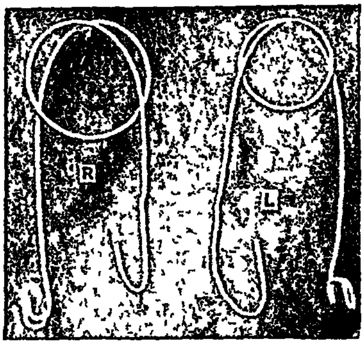

FIG 1.—Right and left splints for facial paralysis.

Too little use of the tongue may cause glossitis The primary factor is often a mild trauma—a cup of very hot tea, hot soup, or a bite. Often it is an exacerbation of a chronic glossitis or stomatitis due to neglected caries or defective dentures. A course of dental treatment is followed by success in the majority of cases, but a small number persist In many of these, a chemical element has added to the distress—e g, a powerful mouth-wash or dentures soaked overnight in well-advertised antiseptics. Such causes are usually appreciated by the profession, and the dental surgeon is asked to attend to caries and report on the dentures Five years should be the limit of service required of a denture—longer only if the dental surgeon reports that it is satisfactory. Decomposing food beneath the denture may irritate the tongue; indeed, ill-fitting dentures are becoming a recognised factor in epithelioma of the mouth, increasing the frequency of this disease in odd situations, especially in women, who more frequently resort to artificial teeth but fail to appreciate the importance of subsequent corrections Soaking the teeth in chlorine or carbolic compounds must be replaced by simple brushing All tooth-pastes containing carbolic and its compounds or pepsin must be withheld. Achlorhydric anæmias should be remembered and receive appropriate treatment

In spite of these measures, a painful tongue may resist treatment unless the element of stagnation is appreciated. Pain caused by too little use of the tongue is illustrated by the following case:—

Mrs. A, a widow, was seen in a pitiable condition with *generalised ulcerative glossitis and stomatitis*, her breath was nauseating, she was unable to swallow, she was losing weight and sleep, distressed by pain and anæmic from toxic absorption Her worst fear of cancer being allayed, the history gave a clue to the bleeding ulceration During the nursing of her late husband six months before her tongue had become painful, possibly scalded by hot tea It was so painful that she ceased to eat, and then so painful that she could not talk I explained to her that no mouth-*wash can replace the natural lubricant, saliva, and that* salivary flow is dependent upon jaw and tongue movements (as witnessed by the dry mouth in the morning) and is banished by speech, whistling, and food She was sent away to chew a peach-stone 20 times, three times a day, and wash out the mouth twice daily with olive oil. Seen three weeks later, the change was remarkable, and no further treatment was necessary

The avoidance of a dry mouth has long been appreciated as a preventive of post-operative parotitis Chewing gum is nauseating to many; the peach- or plum-stone is more acceptable and has proved successful. Warm water or saline mouth-washes help if used with enthusiasm and vigour.

Having written somewhat forcibly on the danger of boiling water in infections of the finger and decried the slogan of the "hotter the better," I did not think it would ever be necessary to discuss the danger of boiling water in association with the tongue. But it *is not sufficient to warn the public merely that pain* and discomfort may result from fluids imbibed too hot; the "hotter the better" phase may even be applied in ignorance to the mouth!

A professional man experienced a slight irritation. Antiseptics having failed to relieve it, he proceeded to apply "aseptic" treatment and used boiling water from a thermos flask at intervals between his professional duties *When seen he was exhausted by pain and dribbling* and was unable to swallow or speak; the tongue was three times its normal size and had in addition a mild streptococcal infection. The lips and even the eyelids were swollen Incision was necessary and later dental extraction. By counting and sucking sweets, and later by the *plum-stone method, relief was obtained, but it was too early* to say whether some elephantiasis of the tongue would not persist and require operation. Unfortunately the patient has since died of influenzal pneumonia.

HÆMORRHAGE FROM A TOOTH SOCKET

After extraction of a tooth, the healing of the socket from blood-clot to bone in the presence of millions of mouth organisms is one of the wonders of nature. Hæmorrhage may be a little difficult to check; pressure, the removal of a detached fragment of alveolar margin, light crushing in of the bony walls, or a stitch may be tried Styptics have their danger—especially adrenaline—in sepsis and in old age, the excessive anæmia and subsequent thrombosis adding to the possibility of necrosis with eight weeks of pain during separation of bone Sucking of the socket and disturbance of the clot by the tongue often prolong hæmorrhage, and may delay healing, producing a condition known as "dry socket"

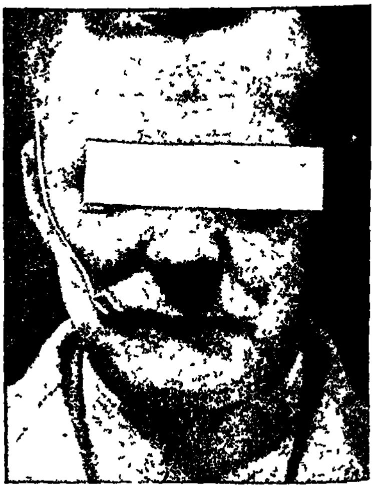

FIG 2—*The splint applied.*

An experience of continuous bleeding after extraction of two lower molars in a case of hæmophilia in a young boy may be worth relating Blood transfusion had preceded extraction but hæmorrhage followed and con*tinued for several days. On inspecting the bleeding sockets* at a second transfusion it was decided to cover that half of the lower jaw with dental composition, not projecting into the socket For three days hæmorrhage ceased but it recommenced on removal of the protecting stent; this was replaced for about a week and no further hæmorrhage occurred

It is an easy matter for the surgeon to make such a crude protection of the healing area A dental surgeon could make a more elegant cap and so counter he disturbance of the clot by sucking or an inquisitive ongue

FACIAL PARALYSIS

I have seen several cases of Bell's palsy after dental nanipulations My attention was first directed to it by a patient who had had a novocain injection for n upper molar Immediately he complained that he cheek felt stiff, and within two days developed a complete facial paralysis It is difficult to imagine how the novocain could reach the seventh nerve rom such a situation The story was so similar to he usual pressure paralysis seen from time to time from the operating table that I was led to a search for a mechanical cause for the condition, and offer the *following* explanation

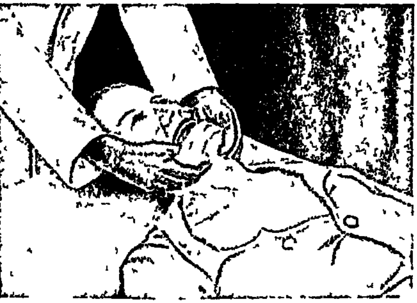

FIG 3 —A method of reducing a dislocation of the jaw, considered safer than the one usually illustrated

In treating the molar teeth the dentist has to put the facial nerve under considerable tension as it crosses the neck of the mandible, indeed, the dislocation of the jaw is not unknown If at the same time he is taking a finger or thumb grip from the vertical ramus the facial nerve is in grave danger of compression Many of the novocain injections are purposely introduced with considerable force to obtain a good effect A patient in a dental chair may signal pain, but he has little chance of stating the site of the pain, and if the point is not appreciated by the dentist he uses further force from a mistaken idea that the tooth is still sensitive That the paralysis may not be immediate should be appreciated, the reaction to pressure may take as long as three or four days to reach its height and may be produced either by pressure or by waterlogging from œdema The paralysis is aggravated by the pull of the healthy muscles of the opposite side and by gravity

In infiltrating the inferior dental nerve a facial paralysis by direct diffusion may occur However produced, the weak or paralysed facial muscles must be put at rest by strapping down the eyelids and by a splint which will elevate and pull back the angle of the mouth Early massage and electrical stimulation are contra indicated The usual hook of copper wire covered with rubber tubing and bent over the ear tends to pull the angle too far backwards and too little upwards Mr Fowler of Messrs Alexander and Fowler, instrument makers, has improved the facial splint for me by a *double hook of rubber covered* wire at the angle of the mouth, continuing the rubber over the head to enclose another short length of wire bent around the opposite ear (Figs 1 and 2) This must be worn continuously for six weeks or longer and is elastic enough to allow the patient to practise the active exercises of snarling grinning, &c, at an early date Care must be taken not to fatigue the muscles by overdoing the exercises

Dislocation of the jaw may occur spontaneously during yawning, especially after the muscles have been fatigued by dental treatment in the molar region a few hours previously Such dislocations are usually easy to reduce by the standard method, which is not without danger of fracture of the jaw in old age It is safer to proceed as illustrated in Fig 3, a method recently successful in an old lady whose jaw was dislocated for 24 hours and was reduced painlessly without an anæsthetic The patient lies upon a couch, the operator stands behind the head and places his thumbs on the molar area with the fingers on the cheeks crowded round the angle of the jaw He very slowly exerts through his extended arms the weight of his body If this is done without jerkiness and continued (as it may be) without fatigue on the part of the operator, the powerful temporal and masseter muscles will elongate and reduction follows The angle of the jaw is in no danger of fracture

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"WHITE BILE"

By NORMAN C LAKE, M D, M S, D Sc Lond, F R C S Eng
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With a Note by J PATTERSON, Ph D
BIOCHEMIST TO CHARING CROSS HOSPITAL

THERE are rare occasions when, owing to a combination of unusual circumstances, a natural experiment *is performed from which deductions can be drawn* that might otherwise be difficult to obtain In the case recorded here the conjunction of an anatomical abnormality, in itself rare, with a pathological change resulted in a complete isolation of the bile ducts from both bowel and gall bladder and so enabled some observations to be made upon the physiology of the mucous membrane of the ducts It is for this reason alone that the case is worthy of note

A male patient, 64 years of age, was admitted to the Bolingbroke Hospital with intense jaundice This was of six weeks' duration and had been accompanied by a little pain at the onset The previous history was negative and at no time during the illness had there been any vomiting or dyspepsia Constipation was marked, the stools were pale, and the urine deeply bile stained Upon examination the liver edge could be felt well below the costal margin, but no gall bladder was palpable nor could any growth be detected in abdomen or pelvis

Operation was undertaken to confirm the probable diagnosis of carcinoma of the head of the pancreas and also with a view to attempting some palliative procedure for the relief of the jaundice and its accompanying symptoms. Through a paramedian incision the enlarged liver was retracted up and a contracted gall bladder with some surrounding adhesions identified, its contents were obviously of semi-solid consistency In the right edge of the gastro hepatic omentum was a large tubular structure comparable in size with the jejunum and deeply bile stained like all the surrounding structures

Wondering if this could be a distended portal vein I inserted a fine needle and to my surprise obtained a water-clear limpid fluid It then became clear that this was a bile-duct and after having drawn off several ounces of the material for biochemical investigation the duct was freely opened and explored by finger and probe Above it divided normally into the hepatic ducts each of which would easily admit the thumb below, behind the pancreas, it came to a dead end and in this situation a hard [illegible] could be felt which was without doubt the primary [illegible] The most interesting feature of the case was [illegible] that no communication with the gall-bladder could be established, nor could I offer any explanation of the contracted state of the gall-bladder or of the pultaceous character of its contents The patient's general condition precluded prolonged exploration and so the operation was terminated by the insertion of a large drain in the enormously dilated common duct

On the day following operation some 45 oz of thin bile of normal colour drained from the tube and the jaundice diminished a little in intensity This drainage continued in decreasing quantities while the patient became increasingly drowsy and died on the tenth day from cholæmia

The post-mortem revealed a most interesting explanation of the operative findings, for the carcinoma of the head of the pancreas had not only produced an absolutely complete obliteration and destruction of the lower end of the common (hepatic) duct, but owing to an anatomical abnormality the cystic duct had apparently joined with the common duct only at the level of the ampulla of Vater, so that this too was also destroyed and all communication with the bowel and the common duct cut off. This anatomical peculiarity combined with the growth had thus led to a complete isolation of the gall-bladder, and the shutting off of all communication between the hepatic ducts and both bowel and gall-bladder. Isolation of the gall-bladder by stone or growth is, of course, not uncommon, and the putty coloured pultaceous material which concentrates therein is fairly well known and sometimes described as "white bile" The complete cutting off of the hepatic ducts, however, is a different matter, for usually these remain connected with a distended gall-bladder which is still capable of concentrating bile and so keeps up a small biliary circulation in the ducts Under these circumstances the common, bile-duct is usually moderately dilated and contains coloured bile In the case under discussion this could not occur, and correspondingly two unusual features were seen · (1) the colossal dilatation of the duct, far greater than I have ever seen in any other obstructive case, and (2) the watery nature of the contents in surprising contrast to the deeply bile-stained walls of the duct from which it was issuing; this material looked exactly like cerebro-spinal fluid and was at first glance thought to be such in the biochemical laboratory

I have asked Dr Patterson, of the biochemical laboratory, Charing Cross Hospital, to comment upon the chemical characteristics of the fluid, but from the surgical point of view it is evident that certain deductions can be drawn It must be presumed, of course, that the liver had ceased to secrete bile owing to the back pressure, but that it was still capable of doing so is shown by the large amount of drainage after the operation In the earlier days of the illness the duct evidently became distended with normal bile, and its increasing capacity allowed for a small amount of further biliary secretion until the critical pressure was reached Thenceforward the pressure remained constant while the contents of the duct were changed by the absorption of salts and perhaps by simultaneous secretion The walls of the main bile-ducts are thus capable of changing the character of the contained bile, but not of concentrating it as a whole to a pultaceous mass such as is seen in the gall-bladder, containing cholesterin, mucus, and debris In the usual case where the common duct is obstructed low down a constant leak up the cystic duct to replace the bulk lost by concentration in the gall-bladder allows a slow but continuous secretion of bile, and thus keeps the ducts full of pigmented bile,

One further point deserves mentioned; at the operation although the higher hepatic ducts were emptied the fluid obtained still presented its watery character, while over the surface of the liver there were a number of large subperitoneal channels obviously filled with the same fluid and representing anastomotic bile vessels It would appear therefore that with the complete stagnation of bile in this case the smaller ducts in the liver act in the same way as the others in absorbing most of the essential materials from their contents. How far such absorption by the ducts can be regarded as part of the normal physiological mechanism in the secretion of bile it is not proper to deduct from this case, since the pressure in the ducts must have been considerably above that of normal secretion, but it is at least suggestive that there may be some absorption always going on, the mechanism of biliary secretion thus remotely resembling that seen in the tubules of the kidney during secretion of urine.

In the strict sense the term "white bile" is an obvious misnomer, for it is neither white nor, in view of the analysis, bile, the term has been used however in order to emphasise its relationship to the material concentrated in the gall-bladder under similar circumstances and usually spoken of as "white bile," although the words are no more appropriate here

Conclusion—The large bile-ducts are not mere passive tubes for the conduct of bile; they are also able in some degree to alter its composition

BIOCHEMICAL NOTE BY DR. PATTERSON

The fluid, of which the physical characters have already been described by Mr. Lake, was submitted to biochemical examination. The following were the analytical results:—

Protein { albumin globulin }	Nil.
Mucin	,,
Bile-pigments	,,
Bile-salts	,,
Cholesterol	,,
Chlorides	0·862% *

* Reckoned as NaCl.

At the time the sample was to hand I did not fully appreciate the nature of the fluid, otherwise a more detailed analysis would have been made Obviously the pH value, and figures for the content of sugar, urea, non-protein nitrogen, bicarbonate, and calcium would have had considerable biochemical interest

The fluid represents the secretion of the lining of the wall of the hepatic duct, and shows, when compared with other body fluids, greatest resemblance to cerebro-spinal fluid and tears Like the latter fluids, it is free, or practically free, from colloidal constituents, and has a high concentration of chlorides Similar to them therefore, it represents a close approximation to an ultra-filtrate or dialysate of blood plasma, and retains its colourlessness even when the rest of the body fluids are deeply bile-stained, selective permeability even extending to the exclusion of such readily soluble substances as the bile-salts The chloride content is considerably above that ordinarily encountered in cerebro-spinal or ventricular fluid, with the exception of certain values encountered in cases of nephritis and uræmia, associated with chloride retention In the absence of the corresponding figures for the plasma chlorides, it is not known whether the high figure for this "white bile" chloride is related to a high plasma oride There being no reason to suppose in this e that the latter should be in any way abnormal, high chloride content of the fluid under examina- n is probably more closely related to the increased ssure obtaining inside the lumen of the hepatic ct, the increased chloride tending to hold fluid inst the increased pressure The bile-pigments, , initially in the fluid have become lost to it, and s process in all probability is brought about by alteration in the physico chemical equilibrium of fluid through stasis, leading eventually to the position of such colloidal constituents upon the lls of the duct, and possibly ultimately to their composition For example, a slight lowering pH, such as could result from glycolysis within fluid, would tend to render the pigments *more* stable in both the physical and chemical sense, d precipitation of pigments by such means would rry down adsorbed bile salts

The secretion of the fluid from the lining of the patic duct and the small biliary channels one would gard as a physiological process, playing its part the maintenance of the biliary circulation, it being rdly likely that such a secretion capable of maintain g itself against considerable pressure would arise novo to meet a new set of conditions On the her hand, my view is that the loss of the original sential biliary constituents is a pathological process ly taking place where there is complete obstruction simple reabsorption of bile pigments is quite out the question, for the equilibrium eventually tablished on these lines would still leave the fluid the duct with a certain amount of pigment in the se of a deeply jaundiced patient Again, if such process of reabsorption were physiological normal lasma would certainly contain bilirubin, presumably the "direct" (van den Bergh) type, which is ntrary to actual findings Finally, a reabsorption echanism would clearly operate against physiological quirements which is to retain bile pigment in the liary channels

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"LILY RASH" AN OCCUPATIONAL DERMATITIS

A POSSIBLE PREVENTIVE TREATMENT

By W H PALMER, M B Lond

With a Note by JOHN FREEMAN, D M Oxon

LILY RASH is an extremely distressing and even sabling dermatitis suffered by the workers who ick the daffodils and narcissi in the early spring, nd although to dermatologists on the staff of g city hospital this occupational disease may be of ttle interest, it is a very serious matter to the rower and worker in the bulb growing districts (for xample in Cornwall, the Scillies or the eastern ounties) It is especially distressing to the grower f he is in a small way of business, as so many of them re, for instance in 1933 it "caused serious dis oration of the industry" (vide *Florist and Flower rower*, March 25th, 1933)

Living far away from medical libraries I have found t difficult to trace what has been written on the ubject, but through Mr Gibson of the Isle of Scilly xperimental Station two papers were found, one by Ir J Philip Smith on Plant Dermatitis in the *ournal of Botany* (1920, lviii, 134) and another y D Walsh (*British Medical Journal*, 1910, ii 854) In the latter it is suggested that the toxic element s a member of the digitalis group and that the raphides of calcium oxalate in the sap act as abrasives on the skin But apparently no effective treatment has been found so far

The trouble varies from an irritating flush on the face to a generalised eczema, and individuals vary in susceptibility Some are so sensitive that even a walk into a greenhouse containing open flowers causes an irritating flush on the face. Some are affected more by narcissus than daffodils, and vice versa Also the disease appears to run in families

Soon after cutting and bunching the daffodils has been begun the typical case will start as a very irritating small papular rash on forearms and hands, apparently originating in the follicles or sweat glands, or in any cuts or abrasions The irritation is so severe *as to lead to continual involuntary scratching*, even in sleep, and a secondary oozing eczema develops with consequent days of discomfort and sleepless nights This eczema may become generalised all over the body (though the arms, neck, face, and thighs seem to be the most affected) and require weeks in bed to effect a cure Once the papular rash has appeared cure hitherto has only been effected with the aid of entire cessation of handling the flowers—which may be very awkward for a small grower with his flowers ripening, or a worker to whom it means discharge as unsuitable for the job

It has been found that —

1 Wet is a factor in causation, probably by softening the skin But the handling of dry plants cannot be arranged in the fields for beside the rain the dews are often very heavy, it is possible to be sure of dry plants *only in greenhouses*

2 Protective ointments help, but do not remain on the skin long

3 Heavy gauntlets make the hands too hot and clumsy

4 Calcium by mouth and subcutaneously has a reputation; but I must say it has failed to have any visible action on my cases of dermatitis

After watching many patients with lily rash during the 1933 season it occurred to me that it might be a sensitisation disease, and if so that a desensitising agent might be found I made many fruitless efforts to enlist interest, and then Messrs Parke, Davis and Co put me in touch with the "asthma" section of St Mary's Hospital inoculation department, there they prepared for me experimental extracts from the pollen, flower heads, stalks, and leaves of the narcissus, daffodil, and jonquil plants These were sent to me from time to time as they were constructed in the laboratory, with the assurance that they were not generally toxic as they had been tested innocuously on normals in London

The first objective was of course to find if these extracts would give any specific reaction suggesting sensitisation when tested on the skin. A series of intra- dermal tests on various volunteering flower workers in the summer of 1933 soon showed very interesting results which can be summarised as follows —

1 Lily rash patients even in the off season gave positive skin reactions of a weal like urticarial type to the daffodil pollen and sometimes also to the narcissus pollen extract, and to the extract of daffodil leaves they developed a very irritating erythematous papule after a delay of 24 to 36 hours

2 Those who do not get lily rash gave little or no reaction to the pollen or leaf extract, in fact one could say in advance from the skin test whether an individual would or would not be susceptible to lily dermatitis This is obviously useful for prognosis

The next step was to obtain a for desensitisation, and enough of heavy doses recommended While the biggest skin reaction and of a type to which we are accustomed from hay-fever work, it was found not practicable to get enough of it; so it was decided to use extracts of daffodil leaves and stalks It was necessary to proceed very carefully because, not only were we working with an unknown antigen, but since the skin reactions were of the delayed type mentioned above we were not sure how far adrenaline might serve as an antidote for an overdose

Owing to the pressure of winter work in general practice it was only possible to try the method on the two most susceptible people—two brothers In 1933 both had had very bad lily-rash; one had been in bed covered nearly all over with eczema for weeks, while the other had had to give up his work and remain in bed for a fortnight Starting with 100 units subcutaneously I got no sign of reaction after doses until 700 or 800 units had been given Unfortunately the prophylaxis could not proceed beyond a 6600 dose before the picking of the flowers began; after that time maintaining doses of 2500 to 5000 units were given as indicated throughout the picking season. I had planned to reach a much higher level of dosage, say 100,000 units, before the picking, but even the much smaller doses I reached would appear to be definitely protective Neither brother had more than a slight rash on arms and neck; the less susceptible man remained at work all the while, and even the more susceptible (though he stopped work) did quite as much work as he had managed to do the year before and yet remained fairly free of eczema Also with these two treated brothers the slight rash had disappeared in a day or two instead of lasting a long while after the picking had ceased. As a positive control a fellow-worker who had not been treated by inoculation had to give up midway in the picking season as he was literally unable to see out of his eyes or use his arms. The two inoculated men have no doubt of the success of this inoculation treatment though it was only half finished, and so far it seems to have protected them against the narcissi also. In previous years all the usual remedies had failed completely.

To sum up: (1) From the clinical signs and the skin tests it would appear that lily-rash is a sensitisation disease. (2) That a vaccine from daffodil stalks and leaves holds out great promise of being a preventive inoculation. (3) Inoculation on many susceptible individuals should be done next winter to test out the method further; and it is with the hope of such being done that these notes have been written.

I should like to thank Dr John Freeman and the inoculation department of St Mary's Hospital for their help and suggestions Without them even the present stage could not have been reached.

Hayle, North Cornwall

TECHNICAL NOTE BY DR FREEMAN

This lily-rash is very interesting, and is well worth the study, I believe, of "dermatologists on the staff of big city hospitals"—for pathological reasons if for no other.

The quick skin reaction with the pollen and the delayed reaction with the stalk extract is curious, I have twice got the same delayed eczematous reactions with chrysanthemums in the case of London flower-shop workers, and one would give a great deal to know just what is the pathological difference between the quick reaction of say grass-pollen in hay-fever and the slow reaction of tuberculin in a Pirquet reaction.

The "units" spoken of in Dr. Palmer's paper are similar to those of grass-pollen vaccine for hay-fever or horse-scurf vaccine for horse asthma—i e, one gramme of the parent substance is taken to yield a million units of the antigen. The system of desensitisation employed was that of heavy desensitisation for hay-fever—i e, an increase of 15 per cent is made on each preceding dose; the number of units injected should mount up in this way till the patient will no longer give the specific reaction on the skin The frequency of the inoculations can be made to suit the convenience of the inoculator and the exigencies of the case—i e., from once a week down to once every three hours.

Those who have attempted it will smile sympathetically at the fruitless efforts at collecting enough daffodil pollen. But I am not sure that Dr Palmer is not dealing with two "diseases": the pollen sensitisation which is probably trivial in its effects, and the stalk sensitisation which is responsible for lily-rash. I shall look forward with great interest to the results of his next year's venture.

Clinical and Laboratory Notes

A SIMPLE METHOD OF ESTIMATING THE SEDIMENTATION-RATE OF THE RED BLOOD-CELLS

By Chris. J McSweeney, M D. N.U.I., M R.C P Irel, D P H.

MEDICAL SUPERINTENDENT OF CORK-STREET FEVER HOSPITAL, DUBLIN; LATE LECTURER IN INFECTIOUS DISEASES, WELSH NATIONAL SCHOOL OF MEDICINE

The diagnosis of juvenile rheumatism, more especially in the early stages of the disease before any serious damage has been done to the heart, is often very difficult The clinical picture, definite enough when there is a background of established valvular disease, is in these early days frequently equivocal, and the practitioner finds himself in genuine doubt as to the existence of the disease at a time when treatment with a view to preventing permanent cardiac lesions is likely to be most efficacious In recent years various efforts have been made to devise some method whereby this indefinite clinical background might be brought into clearer perspective, and of these undoubtedly one of the most useful has been the estimation of the sedimentation-rate of the erythrocytes of the blood

The object of this note is to describe a simple and practical method of performing this estimation which has been devised with the help of Dr. Parry Morgan, lecturer in bacteriology in the Welsh National School of Medicine. It is to some extent a modification of that practised by Payne[1] at Great Ormond-street Hospital, and shares with his the advantage of avoiding venepuncture, a procedure often difficult in young children, and not always practicable in private practice or even out-patient departments, more especially if the test has to be performed frequently.

The following is a brief description of the method —

(1) The fully extended finger or thumb, which has been rubbed with spirit, is bandaged firmly with a piece of stout tape ($\frac{1}{2}$ in wide in the case of older children, $\frac{3}{8}$ in. for younger), the first turn of the bandage passing transversely across the most distal joint, and the second and third turns being superimposed in figure of eight fashion

(2) The bandaged finger is strongly flexed and pricked with a surgical cutting needle.

(3) By means of an automatic pipette (described below) one volume of a 3 8 per cent solution of sodium citrate and four volumes of blood are successively taken up and expelled on to a hollowed glass slide

(4) Should the flow of blood from the puncture be insufficient to allow the requisite number of volumes of blood to be taken up the bandage is released, the finger wiped clean, re bandaged in the extended position, and again flexed when the required amount will be obtained The bandage may be undone and reapplied several times, if necessary, without the need for a fresh puncture arising

(5) By means of the pipette the blood and citrate are thoroughly mixed in the hollow of the glass slide, care being taken not to introduce air bubbles

(6) A capillary tube about 6 in in length and 1 mm in bore is now laid along a millimetre scale ruler and marked (conveniently with a skin pencil) at a distance of 100 mm from one end

(7) The end of the capillary tube furthest away from the mark is then placed in the citrated blood at an angle of approximately 45° and the blood allowed to run up the tube by capillary attraction The speed with which the blood is sucked up the tube may be accelerated by holding the tube at a more acute angle or by tilting the slide

(8) When the citrated blood has reached the pencilled mark, the capillary tube is withdrawn and the moist end wiped in a wisp of cotton wool There is then a column of citrated blood 100 mm in length and 1 mm in diameter in the tube and this is now allowed to take up a central position leaving both ends of the tube clear

(9) The tube, held in the horizontal position, is pushed gently but firmly through a lump of plasticine which seal one end, and then with the sealed end uppermost the tube is stuck vertically into the plasticine and allowed to stand in this position in a cool place

(10) At the end of an hour the height of clear fluid is measured in millimetres, the reading obtained giving the sedimentation rate of the red cells

The test as above described has been carried out upwards of 1500 times without difficulty and apart from the assistance it gives in the diagnosis of subacute cases, it has been of special service in assessing the response to rest of patients under treatment for juvenile rheumatism Normal children and rheumatic children during a quiescent period give readings of 10 mm or less, readings of 20–30 mm are obtained usually in subacutely active cases, while in the acute forms of juvenile rheumatism readings of from 30–70 mm are to be expected A curious feature already commented upon by Warner,[2] is the failure of the sedimentation rate to rise in cases of pure chorea unaccompanied by articular manifestations or carditis In several cases of severe chorea coming under treatment readings of 2, 3, and 4 mm were obtained, but in some of these higher readings were given later pari passu with the development of carditis Fortunately in these patients who give low readings the clinical picture is so definite as not to require corroboration

The *automatic pipette* with which these estimations were carried out was of the mercury and cotton wool type originally suggested by the late Prof B J Collingwood the principle being that the amount of fluid taken up and delivered by the pipette is regulated by the excursion of a column of mercury between two plugs of cotton wool inserted into the proximal end of the pipette The distance between the cotton wool plugs may be fixed so that the pipette delivers 20, 25 or 30 c mm as required An automatic pipette of this type fixed to deliver 25 c mm serves admirably, but the method can be employed quite satisfactorily using an ordinary pipette marked with a file at 25 c mm If an automatic pipette of 20 c mm is used, it is better to take five volumes of blood to one of citrate as otherwise there is some risk that the citrated blood may be insufficient to reach the 100 c mm mark on the capillary The very slight difference in the erythrocyte sedimentation rate which this higher dilution of blood gives is of no practical significance although, strictly speaking, the normal limit with the 5 1 dilution should be placed a few millimetres higher than 10

If a capillary tube, slightly expanded at one end so as to slip over the distal end of the automatic pipette, is firmly jointed thereto with sealing wax, one pipette can be used indefinitely After each test the soiled end of the capillary attachment is snipped off, and a fresh capillary is fitted on when required The capillary attachment may be long enough to allow four or five tests to be carried out before the need for fitting on another arises

An ingenious and handy modification of the fixed pipette above described is Dr Parry Morgan's adjustable pipette which will take up and deliver any desired small volume of fluid according as the position of the proximal cotton wool plug is altered by means of a thin steel wire, one end of which is buried in the plug, the other being enclosed in the teat The whole outfit for estimating the sedimentation rate by the method above described may be improvised at a cost not exceeding a shilling

REFERENCES

1 Payne, W W The Lancet, 1932 1 74
2 Warner, L C Proc. Roy Soc. Med , 1934, xxvii 963

INTRAVENTRICULAR HÆMORRHAGE

By C L Copeland, M B Liverp , D P M
ASSISTANT MEDICAL OFFICER WEST RIDING MENTAL HOSPITAL, WAKEFIELD

Apart from the comparative rarity of the condition, the interest of this case lies in the fact that its course was observed from within a minute of onset, in the differential effect on the respiration and heart, and in the severity of the lesion

A labourer, aged 51, was admitted into Wakefield Mental Hospital on Oct 16th 1911 suffering from melancholia On admission "arterial thickening and increased tension" were noted The Wassermann reaction in blood and cerebro-spinal fluid was negative At first agitated, worried, and full of ideas of unworthiness, he passed over into chronic mania by 1921, when he was noted as being continually excited by auditory hallucinations and his memory was failing By 1930 he was a frank case of arterio sclerotic dementia He was dull, childish, talked rambling nonsense all day, and could give no account of himself at all He remained in this state till his death on June 11th 1934, in remarkable circumstances, at the age of 70

On Jan 19th, 1934, there had been a warning in the form of a fit of epileptic character—clonic movements of whole body followed by short mental confusion, but no apparent after-effects On June 11th at 12 25 P.M., he was sitting outside his ward in which I was doing my round He attempted to vomit, but had an empty stomach and he crumpled up on to the bench His eyes were rolling as he was lifted to the ground His face was pale, and he made no attempt at respiration A finger down his throat established the absence of both obstruction and the pharyngeal reflex His pupils were equal and of average size, the conjunctival reflex was absent and there were no tendon jerks He showed complete flaccid paralysis In the minute required to carry him into the ward he became cyanosed but his heart was beating strongly at an estimated rate of 60 As no respiration had occurred artificial respiration was started and the air passed freely in and out but he never made any attempt at breathing on his own and by 12 43 his apex beat was no longer palpable but as the heart sounds could still be heard artificial respiration was continued There had been profuse sweating and he was [illegible] colour By 12 45 the pupils dilated and the heart stopped

At the post mortem examination next day, on removing the cranium and dura there was no cerebrospinal [illegible] and the convolutions were much flattened The right half of the dura showed eight warty growths firmly attached (shown by section to be fibromas) varying in size from a cherry down to a small pea, each with a pocket in the bulging brain The cerebral arteries were grossly atheromatous, and hæmorrhage could be seen beneath the pia-arachnoid bulging *out through the roof of the* fourth ventricle on to the surface of the cerebellum. There was a well-marked pressure cone After hardening the brain, a beautiful specimen was obtained showing a cast in blood clot of all the ventricles complete except for the tip of the left posterior horn The clot in the fourth ventricle bulged over the inferior cerebellar peduncles on to the surface of the cerebellum, where it was stripping up the pia-arachnoid The aqueduct of Sylvius was distended, its walls softened and partly destroyed for ¼ in depth, especially on the left side, giving it the appearance of being displaced to the right No hæmorrhage was present on the spinal cord The aorta showed atheromatous patches, the left kidney was 1¼ in long, and the right undersized

The source of the hæmorrhage could not be determined without destroying the specimen, but it appeared to have originated in the walls of the aqueduct It is probable that the artificial respiration helped to produce so complete a specimen It must be rare to watch the progress of such a hæmorrhage from start to finish The complete cessation of respiration with a strongly beating slow heart was most striking The pressure cone prevented extension of the blood down the spinal cord.

I am indebted to the medical superintendent, Dr. C J. Thomas, for permission to publish this case

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF ORTHOPÆDICS

A MEETING of this section was held on Oct. 2nd, when Mr ALAN H TODD delivered his presidential address on the

Treatment of Pes Cavus

Mr Todd said that some 15 years ago his attention was directed to pes cavus by the observation that none of the methods, conservative or operative, used in its treatment gave a lasting result The fault obviously lay in a failure to cope with the fundamental cause of the condition, which sooner or later brought about relapse though the visible deformity might have been corrected In the ordinary "idiopathic" type of pes cavus two facts were constant and therefore noteworthy · (*a*) the deformity consisted essentially of the dropping down of the fore-foot and was confined to that part of the foot; and (*b*) paralysis of the lumbrical or of the interosseous muscles was never found at operation. Contracture of the tendo Achillis when it occurred was secondary, not primary, it was never present in the earlier and milder cases, and not always even in severe pes cavus The American teaching that contracture of the tendo Achillis was the fundamental cause of pes cavus was manifestly wrong; a tight tendo Achillis gave rise to the opposite condition of flat-foot.

The fallacy that the lumbrical muscles, or the interossei, or both, were wasted in pes cavus should be discarded The interossei might well be responsible for the production of the claw-toe element in the deformity, but in Mr Todd's view the part played by them was purely passive; the heads of the metatarsal bones dropped down below their normal level, and so altered the line of action of these short muscles that they necessarily pulled up the proximal interphalangeal joints of the toes As to the connexion between the dropping down of the forefoot and pes cavus, it was true that severe drop-foot due to infantile paralysis seldom seemed to lead to pes cavus But the theory that an important if not the essential factor in the causation of pes cavus is weakness of the extensor group of leg muscles had been confirmed by observation of many cases, of which the most striking was that of a mechanic in the Royal Air Force. This man, who had normal feet on enlistment, sustained a transverse cut across the front of his right leg. This cut damaged the extensor tendons but no other structure; some sepsis ensued, and the tendons became more or less bound down, so that their extensor action was much weakened, and the patient was unable voluntarily to pull up his toes or the forefoot. A typical right pes cavus developed, with dropped-down forefoot, plantar callus, retracted toes, and so forth. Murk Jansen some years ago had suggested that pes cavus should be treated by transplanting the extensor tendons to the necks of the metatarsal bones, and this procedure in Mr. Todd's hands had given more lasting results than other operations.

The ideal operation for the permanent cure of the deformity in pes cavus must consist of two distinct parts · (1) the correction of existing deformity; and (2) the adoption of measures designed to prevent recurrence Mr Todd described in detail the procedure adopted by him Mere non-selective elongation of the structures of the sole was inadequate, those on the inner side must be lengthened and flattened more than those on the outer side, therefore the joint capsules, fasciæ, and tendon sheaths were divided as freely as possible by open operation on the inner side of the foot. Steindler's section of all structures attached to the os calcis then allowed the whole sole to elongate, this was followed by vigorous manipulation to complete the first stage of the operation The extensor tendons were then transplanted into holes bored through the necks of the metatarsal bones (Murk Jansen's operation modified) and were sutured, the foot being held in an overcorrected position. If the toes were contracted and the measures adopted did not correct the deformity, arthrodesis of the proximal interphalangeal joints was performed and the fifth toe might be amputated No splint was used As soon as the wounds were strongly healed the patient was encouraged to walk.

Mr. Todd had not yet quite decided the best age for performing this operation; his practice had been to temporise with milder measures—notably the routine stretching of the toes—until the patient was 16 to 18 years old But he was now testing the suggestion that in neglected cases the operation should be performed earlier—i e, at any age after 12 to 14 years—especially in the presence of thick horny plantar calluses which might later become septic In children the disability caused by pes cavus seemed to vary, but in adults it was always a seriously crippling condition, far more disabling than flat-foot, and active treatment should be given The operation described was appropriate to adolescents, and to all adult cases but the septic and the ultra contracted and fibrotic In cases of pes cavus due to infantile paralysis, it was, of course, useless to transplant extensor tendons if their muscle bellies were paralysed For elderly persons with very contracted feet the complete operation was unsuitable, but a vigorous stretching under anæsthesia—perhaps even the cautious application of the Thomas wrench—seemed to afford satisfactory relief even if no material improvement in the appearance of the feet resulted The results of the standard operation described seemed to be quite permanent The toes, if not quite down after operation, tended gradually to come down and to regain their function, pain under the anterior arch and callus disappeared and the walking capacity improved greatly Patients had reported ability to walk "for miles" and to follow arduous occupations The theories upon which the treatment was based might or might not be correct, but the operation had been found to provide a rational, effective, and permanent cure for pes cavus

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REVIEWS AND NOTICES OF BOOKS

Recent Advances in Allergy

Asthma, Hay fever, Eczema, Migraine Second edition By G W BRAY, M R C P Lond, Physician to Children's Department, Prince of Wales's Hospital, late Asthma Research Scholar London J and A Churchill 1934 Pp 503 15*s*

THE second edition of Dr G W Bray's book will be welcomed Protein hypersensitiveness falls naturally into three subdivisions—anaphylaxis, bacterial allergy, and the conditions which Dr John Freeman has called the toxic idiopathies It is with this last group, which includes asthma, eczema, migraine, and related conditions, that Dr Bray's book is mainly concerned Perhaps the greatest recent advance in allergy is its general recognition as one of the important sources of common human ailments, and Dr Bray gives an able description of the manifestations of protein hypersensitiveness, their frequent hereditary background, and the factors which predispose to their appearance He is over-optimistic on the results of treatment, to say that "nowadays most allergic manifestations at all ages are amenable to cure" is unfortunately untrue The triumphs of the allergic hypothesis have been mainly on the diagnostic and nosological side, and the cure of asthma still awaits discovery

The chief fault of the book, which has been aggravated in the second edition, is that it remains the raw material for a good book rather than a finished work Dr Bray says that he has added 700 fresh references, but he would have done better to subtract an equal number Many paragraphs are a succession of conflicting opinions or pointless references—the sections on the bacteriology of the sputum and vaccine therapy in asthma are particular examples of this lack of synthesis When the author summarises a question and draws a reasoned conclusion he is admirable, but only too often he fails to do so and the material suffers for want of inward digestion In future editions it might be wiser to limit the discussion of subjects such as serum sickness and bacterial allergy to a brief reference in the introductory chapter These subjects could be better dealt with elsewhere in the Recent Advances Series, and more space might then be devoted to the description of the technique of skin-testing the indications for and advantages of the various methods, the exact preparation and sterilisation of the testing fluids and the critical strengths in which they should be employed In hospital practice at any rate it is better and cheaper to make the solutions in the laboratory than to buy them A fuller description of the preparation of desensitising solutions and their dangers would be helpful The industrial aspects of allergy and non-protein idiosyncrasies might also be more fully developed When all this is said, Dr Bray's book remains one of the best accounts of allergy in our language It is far less pretentious than most of the American treatises and far more balanced than the general run of British productions on this difficult subject

Allergy in Relation to Lymphadenoma

By G P CHANDLER, M D Cantab, M R C P Lond London John Bale, Sons and Danielsson, Ltd 1934 Pp 104 10*s* 6*d*

IN this little book Dr G P Chandler describes his unsuccessful attempts to obtain specific skin reactions in Hodgkin's disease He points out that every kind of organism which has been suggested as the cause of Hodgkin's disease has been found capable of producing an allergic type of reaction in the host, which can be demonstrated by skin reactions The tuberculin test is the prototype of these skin reactions but isolation of the infective agent is not essential for their demonstration In lymphogranuloma inguinale a specific allergic reaction has been obtained by using emulsions of the affected glands as antigen, although the causative organism of the disease has not yet been identified Dr Chandler prepared his antigens by extracting gland tissue obtained from active cases of Hodgkin's disease The extracts were prepared in a variety of ways and were tested on a series of cases of Hodgkin's disease which included every stage of the disease The results were uniformly unsuccessful, and attempts to demonstrate immune bodies in the sera were equally unsuccessful Negative results of this type are valuable, but it is doubtful whether their importance justified the publication of a 100 page monograph, they are not held to provide convincing evidence against the infectious origin of Hodgkin's disease

Postures and Practices during Labour among Primitive Peoples

By JULIUS JARCHO M D, F A C S New York *Paul B Hoeber, Inc 1934 Pp 175 $3 50*

THIS book may be described, in the terminology of the geologist, as a "conglomerate" composed of chapters on parturition in monkeys and postpartum gymnastics bound up in a matrix of anthropological and obstetrical curiosities Dr Jarcho says its purpose is "to transmit to modern obstetricians the application of those postures and practices utilised to advantage by primitive peoples in coping with their obstetric problems" This statement holds good for one chapter only entitled Primitive Postures in Labour with Modern Scientific Adaptations It is certainly by far the longest chapter containing half of the textual matter, and as the vehicle for his objective chiefly calls for notice

Put briefly, Dr Jarcho's thesis is that primitive women assume the sitting kneeling or squatting positions during labour, rather than the recumbent posture, which deprives them of the pressure of the thighs against the abdominal walls To develop this argument the reader is taken a world-trip from China to Peru and offered an historical view of obstetric practice from the scriptures and ancient mythology through Hippocratic succussion and its equivalents in later times and in aboriginal races to the obstetric stool or chair, thus leading up to suggestions for the better conduct of labour in civilised women The possible modifications in posture advocated by Dr. Jarcho are worthy of attention, especially the use of the squatting position by the parturient woman holding on to the rail at the foot of the bed with the abdomen resting on the flexed thighs; also the rocking-chair and the gynæcological table with crutches adapted to allow of delivery in the exaggerated lithotomy position and the raising of the os pubis, so as to increase the diameter of the outlet during the birth of the head. The most practical of these would seem to be the rocking-chair, which the patient is encouraged to use till delivery is imminent In the early stages she walks about but rests at intervals in the chair, leaning back and putting her feet up on a stool or step, and thus can sit back with the knees flexed and thighs elevated to support the abdomen and pull on the side-rests till labour is well advanced This plan may partially meet the difficult problem of the cultured woman who is readily fatigued by unaccustomed postures and demands anæsthesia during the actual birth. The obstetric table and lithotomy position are too uncomfortable and too productive of fear to be of value except for the anæsthetised patient in whom voluntary efforts are in abeyance

Little need be said of the other chapters in the book, for they have no bearing on its "purpose" The final one on postpartum gymnastics contains an excellent description of exercises and resisted movements designed to improve the abdominal and pelvic musculature and lessen subsequent disability. These exercises are acknowledged as having no relation to the postures and forms of massage adopted by primitive races The only other chapter that has any logical connexion with the author's avowed object is an interesting one, illustrated by photographs, on practices and postures in labour among primates

Except for the adaptations mentioned, text and illustrations on anthropological matters are compiled from such well-known authorities as Witkowski, Engelmann, Ploss, and the Bartels, and fully acknowledged in an extensive bibliography.

The Twilight of Parenthood

By Enid Charles, M A , Ph D London . Watts and Co. 1934. Pp 226 2*s*. 6*d*

This is one of the most interesting and stimulating books which have recently appeared on the population problem Its general thesis is that though a comparison of the crude birth- and death-rates shows that the population of this country is still increasing, the figures, when analysed by refined statistical methods which are described at some length, actually suggest that the birth-rate has now fallen to about 75 per cent. of the replacement-rate Within a calculable period in the near future, then, the population will become stationary, and then begin to decline Developing this argument Dr. Charles clearly derives enjoyment from tilting at Malthus, eugenists, and the capitalist system. Her book consists of six chapters In the first a savage attack is developed upon Malthus's celebrated generalisation about the relation of population to food-supply. A lucid and erudite summary is given of the means recently discovered by chemists, geneticists, entomologists, immunologists, and others for increasing the available food-supply of the world, and the conclusion is reached that it would be "hardly an exaggeration to say that the world's food production could be increased many times, without increasing the area of cultivation, if mankind exploited to the fullest extent all the scientific knowledge already available" The second chapter, in which is reflected the author's training as a statistician, deals somewhat technically with the different methods of calculating the potentialities of growth of a given population. The reader is introduced to such concepts as standardised mortality- and fertility-rates, and to Kuczynski's gross reproduction-rate, in which is calculated the number of girl children born to the average woman in a given community, throughout her reproductive life, on the basis of the fertility-rates prevailing in that community at that time. There follows an examination of the actual present-day trends in population observable in the different countries of the world which leads to the conclusion that, apart from India and China with regard to which the relevant statistics do not exist, the countries with the greatest potentialities of growth are Russia and Japan. In subsequent chapters are discussed the eugenic implications of the differential birth-rate (by which Dr. Charles is not in the least alarmed), the spread of contraceptive practices, and, lastly, the various measures which might be taken to stimulate fertility in a "planned œcology"

The book is well put together, and to each chapter the author brings a fresh point of view as well as a wide erudition It is certainly a book that doctors should read, especially those engaged in public health activities

Alcohol and Anæsthesia

By W. Burridge, D M , M A. Oxon., Professor of Physiology, Lucknow University. London· Williams and Norgate Ltd. 1934 Pp 65. 2*s* 6*d*

In this book Prof Burridge challenges the whole fabric of orthodox physiological teaching on alcohol. He applies to this aspect of pharmacology two novel principles which in his former works have been expounded in detail. Central neurones, he says, are rhythmically active structures which possess two sources of potential for their energy manifestations, and the physiological basis of an idea is a group of nerve-cells rhythmically active in unison Though alcohol is considered by the orthodox to produce only two modifications of the activities of such a system, he maintains that in an organ of limited type these activities provide an infinite variety of change. He deduces from his experiments that the artificial depression caused by alcohol continues to operate simultaneously with the subsequent recovery process, a result which conflicts with current theory. His view is that the properties of muscle and nerve depend on the properties of the colloidal system which constitutes them. The energy manifestations of these systems come from aggregation changes and adsorption changes The former change is slow or "hysteresial"; the latter is rapid. Small amounts of alcohol stimulate through the hysteresial type of change, but as the strength of the drug is increased a depressing influence becomes definite Eventually depression overwhelms stimulation. Of anæsthesia he says that, so far from being a condition of generally depressed activity, it is a feverish activity of central neurones and end-organs with an altered balance of kinesiphores.

THE LANCET

LONDON SATURDAY, OCTOBER 6, 1934

DIATHERMY IN CANCER

THE diathermy knife has become a recognised instrument of surgical treatment, mainly in the extirpation of malignant tumours, for which purpose it is now chiefly employed What precisely are the indications for its use, and any limitations it may have, should now be apparent in the experience of those who have used it extensively In a paper which appeared in two recent issues of THE LANCET (pp 633 and 694) Mr NORMAN PATTERSON relates 109 cases of malignant neoplasms of the mouth, nose, and pharynx, in which more than five years ago he used the diathermy knife In his view its main advantages over cold steel are these avoidance of the implantation of cancer cells in the wound and their dissemination through veins and lymphatics, diminution of hæmorrhage during operation, and therewith a clearer field and no shock from loss of blood, destruction of tissues, which may contain cancer cells, beyond the actual site of section, and sterilisation of the wound Of these the avoidance of disseminating cancer cells throughout the body is far the most important It is true also that bone which has been invaded by growth, or which is dangerously near to it, can be destroyed by the use of the diathermy button, but the resulting necrosis may take many months to separate and the method is not suitable for regions such as the interior of the larynx, the pyriform fossa, or the post cricoid part of the pharynx, where cartilage or considerable bony structures must be removed For tumours of the maxillary antrum and the ethmoid region, Mr PATTERSON advocates a combination of the diathermy knife with ordinary surgical methods, using the current for all dissections of the soft parts in order to obviate bleeding, but incising the skin with a scalpel and removing bone with saw and chisel He then goes further and applies the diathermy button to the cavity left after removal of the tumour, and to all bony edges, as he considers that by this means the chance of recurrence is diminished and that this outweighs the disadvantage of the resulting sequestra

In the treatment of cancer of the upper air-passages, we are still in need of that precise knowledge which will enable us to decide, in any individual case and in any given region, whether radium, X rays, surgical excision by cold steel or by diathermy knife, offers the most prospect of cure In many cases the best results will only be obtained by a combination of two or more of these methods, in some indeed only by combination of them all Dr A ZUPPINGER (Zurich) tells us[1] that little is now heard of radical operations for carcinoma of the pharynx; Dr ELIS BERVEN (Stockholm) has made a similar statement[2] in regard to growths of the tonsil, and Dr JAMES DUFFY (New York) considers[3] the results of surgical extirpation so bad that tonsillar carcinoma at any stage should be classed as surgically inoperable Mr DOUGLAS HARMER[4] also regards tonsillar growths as so malignant that simple removal with the knife ought never to be attempted, he considers diathermy much safer and combines it himself with radiation Mr PATTERSON employs a combination of these methods in suitable cases, and his results are relatively good But he groups together tumours of the tonsil, faucial pillars, and soft palate because in advanced cases it may be impossible to ascertain the exact site of origin In view of the extremely bad prognosis in tonsillar growths submitted to operation, it would be of special interest to have Mr PATTERSON's experience of diathermy when the tumour demonstrably arises from the tonsil For the treatment of cancer of the anterior part of the tongue diathermy excision appears to be an improvement on former methods, and it has brought into the realm of practical surgery those cases where the floor of the mouth is involved In the posterior part of the tongue the tumour is usually highly malignant and secondary deposits in the glands are generally early and extensive, here surgery has proved valueless and, unfortunately, this is also a less favourable site for treatment by radiation Whatever has been *done, less than 10 per cent of the patients* live for three years Mr PATTERSON reports good results in the treatment of a few malignant growths on the inner aspect of the cheek by a technique of his own His method is to dissect up a skin flap and replace it after the growth has been removed by the diathermy knife, this avoids leaving a large hole from the face into the mouth While diathermy has the great advantage of giving a bloodless field it by no means ensures the patient against the danger of post operative hæmorrhage, and this he finds especially liable to occur after excisions in the anterior part of the mouth, although this has not been the experience of other surgeons

Mr PATTERSON's review of the abundant clinical material which has passed through his hands will help to convince many who have hitherto been content with the older surgical methods, but perhaps he hardly states the case strongly [illegible] for the use of the diathermy knife in [illegible] He might have gone further and [illegible] asserted his doubt whether the use of [illegible] can now be justified in view of the risk of [illegible] tion of cancer cells when it is used [illegible] hand, he has perhaps hardly [illegible] clear that even the diathermy [illegible] remove the tumour so far [illegible] if it is intended to destroy [illegible] actual site of section something more is required. In any case the incisions must be planned with a margin of half to three-quarters of an inch beyond the apparent edge of the growth, as in similar operations with the knife, if a good result is to be expected.

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[1] Maligne Pharynx- und Larynxtumoren Leipzig 1931

[2] Acta Radiol [illegible]

[3] Surg Gyn and Obst [illegible]

[4] Relative Value of [illegible] of the Upper Air passages [illegible] 1931, ii, [illegible]

INHERITANCE OF RESISTANCE TO INFECTION

THE inheritance of resistance, or of susceptibility, to infective disease is a question that concerns the clinician, the epidemiologist, and the laboratory worker. That genetic factors are concerned in resistance we cannot doubt. We have ample evidence that in this character, as in others, one animal species differs from another, and clinical experience clearly supports the reasonable biological assumption that, within a single species or race, one individual differs innately from another in susceptibility to a particular infective disease or group of diseases. But acceptance of the view that genetic differences in resistance exist does not take us very far, and as soon as we begin to seek more detailed information we find little but confusion and ignorance. The Medical Research Council have published, as the latest of their special report series, an admirable survey by Mr A BRADFORD HILL, D Sc,[1] which shows clearly and concisely why this ignorance and confusion still exist, and how best we may escape from them. That the only hopeful method of approach is that of direct experiment has, of course, been generally realised, but the extreme difficulty of the experimental method as applied to this particular problem, and a fairly common failure to guard against the many possible pitfalls, have seriously hindered progress. Taking the simplest problem first—the clear experimental demonstration of those individual differences in genetic resistance that almost certainly exist—there are many obstacles to be surmounted. The straightforward, common-sense method is to infect a number of animals with a dose of bacteria that will kill some of them, but not all, breed from the survivors, submit the offspring to the same test, and so on through a number of generations. Of the original parents, those that survive will, by hypothesis, owe their survival in some part at least to a heritable resistance, and this they will pass to their offspring. If these genetic factors increase resistance to a significant degree the first selected generation will show a higher average resistance than an unselected group of the same animal species and strain, and continued selection in successive generations will increase resistance up to some unpredictable limit. This method has, in fact, been very commonly employed, but it lies open to many fallacies. The method of selection involves the infection of the parents of each generation with the bacterium or virus understudy. Those parents that do not die will not be unaffected by this procedure. Many of them will contract a non-lethal infection that will add an acquired active immunity to the genetic resistance that may, or may not, have determined their survival. This acquired immunity may be passed on to their offspring in two ways. The females, at least in mammalian species, will pass specific antibodies to their young via the placental circulation before birth and in the colostrum during the early days of extra-uterine life, so that many of the new generation will be protected for some weeks by a passive congenital immunity. Both males and females, some of whom will certainly be carriers of the infecting organism, may pass this infection to their young, perhaps during the period when these are partially protected by a passive immunity, and in so doing they will induce an active immunity that will persist well beyond the period of the next test and the next mating, and at each such test the infecting organism will be reintroduced into the breeding stock, and the immunising process will be repeated. We may, then, neglect those experiments in which this obvious source of error has been ignored. Many workers have, however, recognised it and have attempted to eliminate it by various devices. Much of Dr. HILL's report is devoted to a discussion of the degree to which these devices have succeeded. He concludes that some of the results recorded lend strong support to the view that a true genetic immunity may be developed by selective breeding, but he shows clearly how difficult it is to establish a case that is beyond criticism.

Accepting the existence of genetic immunity as proved beyond reasonable doubt, what of its degree? There are tallish men and shortish men, but not many giants or dwarfs. Does genetic immunity vary in this kind of way, so that some individuals are rather more susceptible than the average and some rather more resistant, or can we envisage the development by selective breeding of a strain that will withstand all risks? Some workers, at least, have included in their "resistant" category animals that showed but a slight departure from the average, in that they took a little longer to die. In other instances, however, there has been a significant, and occasionally a large, difference in the proportion of deaths in selected and unselected groups, but there is not, in the evidence as yet available, any indication of the development of a complete and uniform resistance, even when the test applied is the injection of a dose of bacteria that fails to kill all the animals in the control unselected group. The development of a breed of animals that would solidly withstand all risks of natural contact infection clearly demands a larger measure of success than the experimentalist has yet attained. Is this genetic resistance dependent on narrowly specific reactions of the kind involved in acquired active or passive immunity, or does it depend on quite different factors that are operative over a much wider range? Apart from its biological interest, this problem has severely practical implications, if we are to consider seriously the possible application to animals of genetic methods of controlling infective disease. To treat each of our serious infections of livestock as a separate problem along these lines would be an uninviting prospect We might hazard a guess that genetic resistance probably depends on a multiplicity of factors, some at least of which will be less sharply specific in their action than the antigen-antibody reactions that play so large a part in acquired immunity Here, as Dr HILL shows, we have hardly passed the guessing stage, for the recorded data in this regard are flatly contradictory, though they do not suggest a rigid limitation of the effect of selective breeding to a single infective disease

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[1] The Inheritance of Resistance to Bacterial Infection in Animal Species A Review of the Published Experimental Data By A Bradford Hill Medical Research Council, Special Report Series No 196 London: H M Stationery Office 1934 Pp 71. 1s 3d

Dr HILL has done a very real service in distilling from a highly confusing mass of literature a review that shows clearly what we may regard as known with reasonable certainty, what is probable, and what is as yet quite unknown He adds to this service by *indicating the lines along which future* experiments should proceed The stock selected for breeding must be proved, by all available means, to be free from the infection under investigation, and must be maintained in this uninfected state until their progeny have been removed from all contact with them This involves a heavy expense in animals, since matings within each group must be made at random, the litters for further breeding being selected after a subsequent test of the parents, or by selecting a second litter from parents that have yielded one litter of more than average *resistance* As a possible alternative to this laborious procedure, though applicable over a narrower range, he suggests the use of a bacterial toxin rather than a living bacterium as a test reagent This could be employed in the selection of resistant individuals before mating without the risk of infecting each generation in turn, and so inducing an active and lasting immunity The induction of a transient passive immunity would still be a disturbing factor, but a far less serious one, and its influence could be eliminated by testing out one or more additional generations derived from the finally selected stock, omitting the testing of the parents by toxin injections

UVEO-PAROTID TUBERCULOSIS?

THE strange syndrome known variously as uveo parotitis, uveo parotitic polyneuritis, febris uveo parotidea, and uveo parotid tuberculosis was first described by HEERFORDT in 1909 It seems to be a definite clinical entity and it is seen chiefly in those under 30 years of age, women being affected twice as often as men There is a short prodromal period with malaise, mild fever, sometimes night sweats, and frequently skin eruptions, among which erythema nodosum is common The presenting symptom as a rule is visual impairment due to some inflammatory lesion of the uveal tract, usually an iritis Soon afterwards swelling of the parotid gland appears, bilateral or unilateral, the gland being tender but not painful The submaxillary glands may also be involved, as in the case reported in our present issue by Dr ESMOND REES, and occasionally the implication of the lacrymal glands gives rise to Mikulicz's syndrome Facial palsy occurs in a large proportion of cases and may develop before, with, or after the parotid swelling, it may be on one side or both and it has been attributed to pressure on the facial nerve by the enlarged gland, although in two cases there has been evidence of a lesion of the chorda tympani Less often polyneuritic signs have been present, either cranial (as in Dr C B V TAIT's case) or more extensive, rarely the polyneuritis has dominated the clinical picture, and an example of this type is provided by the first of the two cases now described by Dr H G GARLAND and Dr J G THOMSON Less common findings are splenomegaly and generalised enlargement of lymph glands The fact that some of the patients have no pyrexia discredits HEERFORDT'S original name of febris uveo-parotidea The tendency is towards spontaneous *recovery—although this seems less true* of the ocular lesions than was formerly supposed—and only four deaths have been reported In three of these autopsy revealed miliary tuberculosis

Argument has raged for many years over the cause of this condition HEERFORDT originally suggested that it was a complication of mumps, but there is no evidence to support his contention Syphilis, beri-beri, oral sepsis, and diphtheria have all had their advocates, but none of them seems to need serious consideration S BANG held in 1918 that the underlying cause is pseudo leukæmia, *a term which no longer has any exact connotation for* the hæmatologist Actually the ætiological problem appears to have resolved itself into the question "Is uveo parotitis due to tuberculosis or is it due to some unknown infective agent?" Clinically it runs so true to type that it is hard to think of it as arising from different morbid processes, its natural history suggests that it is a pathological entity In a previous paper GARLAND and THOMSON have arrayed a good many facts which point to tuberculosis as the cause, in three of the four fatal cases death was due to generalised tuberculosis, biopsy of the parotid glands has, they claim, always provided histological evidence of tuberculosis of the fibrosing endothelioid type, and injection of biopsy material in one case produced fatal tuberculosis in a guinea pig Collateral evidence of tuberculosis is even commoner, a tuberculous family history pleural effusion, radiological evidence of [illegible] cervical adenitis, and cutaneous tuberculides figure *frequently in case* reports A *scrutiny of the recorded cases suggests* that if evidence of tuberculosis is carefully *sought* it is usually to be found and further that *many* of those reported have not been investigated *with* enough completeness to exclude it This criticism [illegible] lar to is applicable *to Dr. Tait's case*—though *he thinks* [illegible] ophi or it unlikely that his *patient's* polyneuritis *could* [illegible] that who tuberculous—while *in the reports from Dr* [illegible] vision Dr LLOYD DAVIES and Drs GARLAND and THOMSON [illegible] accident or all the cases have features suggestive of tuberculous [illegible] ocular visual infection. [illegible] regard to the [illegible]

Those who prefer to postulate an [illegible] *infective agent hold* that the evidence of [illegible] *is insufficient* and point out that [illegible] *bacillus has not been* demonstrated [illegible] that this has not been done, but it is notoriously difficult in the endothelial type of the disease. TAIT declares that in his patient the ocular lesions were not typical of tuberculous uveitis, but several biopsies of the iris have given positive evidence of this infection. The more fully investigated cases are published the greater becomes the weight of evidence in favour of a tuberculous ætiology, and it looks as though GARLAND and THOMSON would be justified in their decision to call it uveo-parotid tuberculosis It is well to bear in mind, however, that the histological picture is one on which few pathologists will dogmatise, and that Koch's bacillus was once blamed for the reticulo-endothelial proliferation of Hodgkin's disease

A PHILOSOPHY OF LIFE

THE common man who seeks to direct his life by what he thinks to be reason will gradually make a mess of it, his processes of thought may *be correct enough but, as he fails to realise, his* premises are inadequate or actually faulty What we commonly call good conduct is the product of instinct and sentiment—instinct is fundamental, sentiment is social adaptation—and it would be beside the point for the moment to discuss where instinct comes from; we can be satisfied with the observed fact that it seldom points the wrong road In the widespread interest in philosophy and psychology which has prevailed in the last 20 years there has been both gain and loss Not a few persons, mostly young, have spent so much time puzzling over why they did things that they have had no time left to get anything done, and for most people introspection of the mind is about as healthy a proceeding as introspection of the bowels or stomach But when it comes to directing other people's lives some knowledge of the viscera is certainly useful, and so it is with the mind And the mind is a subject about which medical men usually know a good deal less than they do about the chest and belly, it would be well for them to know more, not so much for their personal use as for the guidance of those in trouble who come to see them We welcome therefore the announcement which will be found in our advertisement columns that the British Institute of Philosophy has arranged a course of four lectures for medical men on the importance of a philosophy *of life for mental health* Prof W LANGDON BROWN will speak on the biology of social life, Dr WILLIAM BROWN on health, self-determination, and free will, Dr. EMANUEL MILLER on curative activity and mental health, and Dr H. CRICHTON-MILLER on belief and adaptation The lectures will be given at University Hall, Gordon-square, on the first four Thursdays in November at 5 P.M. The lecturers are distinguished and the subjects attractive

ANNOTATIONS

SAFETY IN RADIOLOGY

THE danger of over-exposure to X rays and radium can be avoided by the provision of efficient protection and suitable working conditions. This is the opening sentence of the preliminary report of a committee set up in 1921 under the chairmanship of Sir Humphry Rolleston If avoidable, why not avoided? The British X Ray and Radium Protection Committee has done much to codify the knowledge that we have and to see that this knowledge is applied But no one could affirm that the need for its activity is gone by, in fact, as radiology develops it brings in its train new dangers which will require constant watchfulness to meet. Since July, 1921, when its first recommendations were issued, three further reports have appeared. in December, 1923, May, 1927, and again in June, 1934 This last report [1] which is now before us contains new material, in particular (Sect VI) a number of recommendations for the storage of X ray films In view of the terrible disaster at the Cleveland Clinic Hospital in 1929 it is natural for the first recommendation to be that *non-inflammable films* should be used whenever possible Another section (IX) of the report considers the dangers which arise in connexion with the various types of high and low voltage machines with which treatment and diagnosis are being carried out, and may be regarded as supplementary to the Ministry of Health's publication (memo 161 Med) on "Precautions against Shock from Electromedical Apparatus." Periodical inspection of all such apparatus is essential, with particular attention to proper earthing Sect V also deals with the precautions which are necessary in rooms devoted to X ray work Increasing voltage—and voltage seems always to be on the up-grade—has defeated all efforts to make X ray equipment "shock-proof," and even when the *high tension circuit is completely* enclosed in earthed conductors it is still necessary to forbid any indiscriminate handling of these protected tubes during operation Workers who are under the impression that no shock is possible from such apparatus may get a nasty, or even a dangerous, shock from the current passing through the dielectric to the earth connexion should the earthing system be defective

With regard to those thinking of taking up radiology the committee recommends that no person should be employed as an X ray or radium worker unless his general health is good and his blood has been submitted to a complete investigation His total leucocyte count should reach 6000 per c mm and his lymphocytes 1200 per c mm in at least one of three afternoon counts A decided and sustained drop in either of these counts, which should be repeated every three months for radium workers and at longer intervals for X ray workers, must be the signal for a holiday, suitable treatment, and a review of the conditions of work The recommendation for a working day of not more than seven hours, a working week of not more than five days, and four weeks' holiday every year is one which merits the serious attention of those responsible for the organisation of X ray and radium clinics The report, which covers ten closely printed pages, should be studied with care by every radiologist and radiographer. Its main provisions have more than national importance, for they formed the basis of the international recommendations adopted at Stockholm in 1928.

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[1] Copies may be had on application to the hon secretaries of the Protection Committee, 32, Welbeck-street, W 1, or to the director, National Physical Laboratory, Teddington, Middlesex

IMPENDING POPULATION CHANGES

THE changes which are impending in the constitu- on of our population may be foretold, by those ho study them closely, with much the same pre lence as can be applied to the behaviour of a river oods in the upper reaches will be followed, within measurable period, by high levels in the lower formation from different points in its course can able the expert to foretell what the river will do such and such a place within such and such a me Thus the knowledge that heavy rains at the urce have been followed by a dry period may stify the control of a dam lower down, in anticipa on of a rise in the level round about a certain date, llowed by a fall Corresponding variations can be redicted in the population of a country, which is t a given moment of time, like the present, actually creasing, but will diminish within a calculable period he constitution of our population at present is nusual A steady fall in the birth rate during the ist 60 years, *together with the prolongation of the* pan of average life, results in the existence of fewer oung and more old people in the country than ormerly The old people will begin to die in ncreasing numbers in the near future When this appens, the death rate will rise above the birth rate nd the population will, apart from the effects of nigration, begin to decline These impending changes re vividly described by Miss Grace Leybourne in n article published in the *Sociological Review* of pril, 1934 The population of England and Wales vill be 40,213,500 in the year 1936, but in 1976 0 years later, it will have fallen to 28,656 600 Attention is also drawn to impending changes in ge distribution In 1931 children between the ages of 0 to 15 years contributed 24 2 per cent, and persons over 65, 6 2 per cent of the population In 1976 it is calculated that children of from 0 to 15 years will contribute 12 5 per cent, and persons over 65 17 5 per cent of the population of these islands

In recent years we have become so accustomed to the idea that this country is over populated that some time is likely to elapse before the implications of these facts are properly grasped A reorientation of opinion is, however, inevitable It is indeed likely that, after the decline in our population has actually begun, the quarterly returns of births and deaths will be regarded by the press as one of the leading items of news, and may even be accorded the compliment of headlines in our daily papers As the decline gains momentum prominence will inevitably be given to proposals and schemes for combating it Such measures as creches, children's camps free medical and dental services for children the provision of maternity leave for married wage earning women, a modified system of education which eliminates competition for expensive schools and even changes in the social attitude towards the illegitimate mother are discussed in a recent book by Enid Charles Ph D, reviewed on another page She concludes that in the present organisation of society these innovations would receive little support In her view it is to Russia that we will have to look for guidance in the period of the twilight of parenthood *In fact* the diminution of our population can be foreseen with more certainty than the measures which we are likely to take to combat it The British have a proverbial capacity for appreciating realities and adapting themselves to them when forced to do so Once the implications of the present trend in vital statistics are generally understood, it is at least possible that a solution may be found without this country finding it necessary to imitate the Russian social experiment

GUM ACACIA INTRAVENOUSLY

FACILITIES *for blood transfusion are now so ample* that the practice of injecting solutions of gums no longer has a place in the treatment of traumatic anæmia and shock Gum solutions, however, are still used pretty commonly, and apparently with at least temporary success, in combating the intractable œdema of certain types of nephritis Since these solutions are intended to reinforce the colloidol osmotic pressure of the plasma, which has been reduced by depletion of protein, it is clearly desirable to know what osmotic pressure is exerted by the gum in the concentrations commonly employed Prof F C Dodds and Mr R T M Haines,[1] who have sought this information, find that the osmotic pressure of a 6 per cent solution of gum acacia in normal saline —that is, in the concentration usually adopted by the clinician—is only a little more than a third of that of the plasma colloids Even after sterilisation, which causes some increase, the pressure is still less than half that of the plasma They also find that the colloidal osmotic pressure of gum acacia is greatly reduced by the presence of salt, and infer that the addition of salt to gum solutions is, partially at any rate, defeating the clinical object desired It does not follow however, that a salt free solution would be free from drawbacks If the body will tolerate the introduction into its veins of a substance so foreign to its normal composition as gum acacia—and the fact that it does so speaks volumes for its adaptability—it is by no means so complacent in its reception of salt free water in any quantity, for significant reduction in the salt content of the body fluids is incompatible with life It looks as though he who would employ gum solutions in the treatment of nephritis must choose between the devil of water intoxication and the deep sea of unrelieved œdema

OCULAR REQUIREMENTS FOR AIR PILOTS

A THIRD edition of the brochure on the Medical Examination for Fitness for Flying[2] has just been published by the Air Ministry No drastic changes have been made but the requirements for the eye examination are of general interest The visual acuity demanded for candidates for the Royal Air Force is 6/6 in each eye without glasses The eye specialist, however, may, at his discretion, recommend acceptance when the visual acuity is equal to 6/9 (for short service commission 6/12) in each eye provided that such vision is correctable by glasses to 6/6 in each eye For private flying (A licence) and for navigators (B licence) correcting glasses are allowed to be worn, provided a degree of visual acuity can be attained equal at least to 50 per cent of the normal for each eye or 60 per cent for one eye and 70 per cent for the other Manifest hypermetropia of 2 dioptres or over is a bar to acceptance, but nothing is said about myopia or astigmatism and this is remarkable as a pilot who is entirely dependent on glasses for good vision might be materially handicapped by accident or weather Normal colour vision and normal visual fields are necessary for flying and with regard to the former it might be expected that a proper test examina tion would be required in order to eliminate any such condition as incipient retinitis pigmentosa which may be compatible with full central visual acuity. The instructions state that the rough test by hand movements is, generally speaking, quite sufficient, but this we should be inclined to question, at any rate in default of a very careful ophthalmoscopic examination

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[1] [illegible] Jour 1934 xxviii 492

[2] The price of the brochure is 9d [illegible] obtainable at H M Stationery Office [illegible] Manchester Cardiff, or [illegible]

The major part of the section on eye examination is concerned with tests for ocular muscle balance and perfect binocular vision "It has now been proved beyond argument that lack of true ocular muscle balance is the most common cause of error in judgment in bringing an aircraft to the landing ground." To exophorics the ground tends to look nearer than it really is, to esophorics further off For either, and still more for hypophorics, more effort is required to maintain perfect binocular vision than for a pilot whose muscle balance is normal Hence the great importance of the tests for perfect muscle balance and, it may be added, of the course of training which was instituted many years ago by Group-Captain E C. Clements to obviate these defects One of the tests most in favour at the Air Ministry is the Bishop Harman adjustable diaphragm, by means of which the field of vision of one eye can be either separated entirely or made partially coincident with that of the other In the former position of the diaphragm—i e , when the opening in it is at its narrowest—any defect of muscle balance is revealed and if there is none there is said to be perfect ocular poise. Short of this the width of the opening in the diaphragm necessary to mask any heterophoric defect provides a measure of the degree of the defect

THE STUDY OF BEHAVIOUR

THE advancement of science has always been through the spear-head of physics, the new concepts of matter and energy which have followed from the mathematical reasoning on observation leading to a new orientation in natural philosophy Nineteenth-century materialism has been largely abandoned in the realm of physics, and the importance of the mental contribution to our knowledge of the external world has introduced into science a psychological bias This tendency has received tardy recognition in the biological sciences Biology, physiology, and neurology have not freed themselves from the spectacular advance made in the middle of the last century, and materialistic explanations have been pressed without a realisation of the metaphysics upon which this materialism has been founded. The psychologists have been accused of vagueness and unscientific methods, because it is alleged that they have failed to explain behaviour on the basis of what is regarded as established physico-chemical laws Neurology, satisfied with the concept of reflexes, has built up a coherent science, but coherent mainly because it has regarded behaviour as an additive product of a series of discrete events, founded upon stimulus and response

In his presidential address to the section of zoology at the meeting of the British Association, Mr E S Russell, D Sc , regretted that biology and neurology to-day have rooted themselves in a dualism of mind and body, which ultimately ousts the mind and leaves the bodily mechanism in command of all behaviour situations. There is no warrant, he states, in experience and in the observation of animal behaviour, for such a sharp bifurcation of mind and body. In order to understand behaviour, we must free ourselves from this Cartesian philosophy Prof A N Whitehead, of Harvard, speaks of the seventeenth century as having produced a scheme of scientific thought framed by mathematicians for mathematicians, competent to frame abstractions based upon a concept of matter with its simple location in space and time, but leaving out of account mind as perceiving, suffering, and reasoning When these abstractions came to be applied to concrete experience they were found not to fit in with the behaviour of living things Cartesian philosophy has left us saddled with a theory of the organism as a machine , the instinctive behaviour of animals is squeezed into the mechanical mould of stimulus and response, whereas biological observation goes to prove that conditioned stimuli do not explain the search that organisms make in order to achieve adaptation. The internal needs or interests of an organism are as much determinants of behaviour as are the stimuli that impinge upon it from without This is the kernel of Dr Russell's address Behaviour is not the result of additive processes, for, as Koffka and Köhler have shown, the organism picks out whole situations, and for the purpose of biological adjustments for the satisfaction of needs, always sees a "pattern upon a ground "

Behaviour is not drawn from an organism, but is, strictly speaking, directive Slavish devotion to the method of a laboratory will always introduce mechanical categories, and mechanical explanations will logically follow Fruitful biological study can only follow from work in the field where whole situations naturally appear, and where configurative perception follows in action Perception, therefore, is not merely passive awareness, but an active interplay between the organism as a whole and a felt situation This organismal standpoint will liberate not only biology but psychology from that pseudo scientific discipline known as behaviourism. In future, Dr. Russell concludes, we shall not be bound to confine our attention to those facts which fit in with the spatiotemporal view of matter, but we shall accept all facts of experience and observation as our scientific province

THE MERITS OF CYCLOPROPANE

SINCE the end of 1930, when R M. Waters first tried it as an anæsthetic for human beings, cyclopropane has been in continuous use in America, though on a small scale. Its progress has been hindered by its expensiveness—an objection applying with special force in this country because all supplies have had to be imported. Now, however, by making the patient breathe the gas over and over again (carbon dioxide being removed) the cost of its administration has been brought within reasonable limits Dr Harold R Griffith,[1] of Montreal, who has given it to 350 patients, finds that on the average under two gallons is required for each , and it is now produced at 50 cents a gallon In less than 5 per cent of the abdominal operations (numbering 206) was it necessary to give ether in addition to secure relaxation In all respects, indeed, cyclopropane proved itself an excellent anæsthetic, and this agrees with Dr Wesley Bourne's limited experience of it for childbirth, related in our issue of July 7th (pp 20 and 36) The advantages claimed—namely, rapidity and pleasantness of induction, relaxation, and freedom from after-effects—have been evident on the comparatively few occasions when it has been given in this country, and it is to be hoped these occasions will soon be far more frequent, since the Anæsthetics Committee has now arranged to distribute some of the gas to selected hospitals.

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[1] Canad. Med Assoc Jour , August, 1934, p 157

THE MENU OF THE SPA

Dr. J. W. McNee spoke anxiously last May of the wild free life of the spa patient residing at a hotel. He would like to be sure, he said, that a patient with cirrhosis of the liver could not order champagne at his hotel in the middle of the morning and get it. His words, uttered during a visit of the British Health Resorts Association to Harrogate, were evidently an effective stimulus, for the Harrogate Corporation, Medical Society, and Hotels and Hydros Association have entered into a benign conspiracy to keep the patient in his place and guard him from temptation. Under the new system spa doctors will issue dietetic charts in duplicate to their patients, one will be handed over to the hotel management, the other the patient is allowed to keep. The hotel will see that he gets what is on the chart and nothing else and no extra charge will be made for the special diet. Five types of diet are available, and one or other of these, it is claimed, can be modified to suit any ailment encountered among spa patients. They are (*a*) a low caloric diet for the reduction of weight, (*b*) a restricted carbohydrate diet with a high vitamin content, (*c*) a restricted protein diet, (*d*) a lacto-vegetarian diet, and (*e*) a low fat diet. A similar service, it may be recalled, was performed last spring for visitors to Bath, when the local division of the British Medical Association, the Bath Corporation, and the Hotels Association agreed that each patient should receive from his doctor a diet card from which forbidden articles of food had been deleted. This he would hand to the head waiter of his hotel whose task it would be to keep him within his dietetic bounds. Here, again, no additional charge is made unless some specially expensive article of food is ordered. Both these systems have the advantages of treating each patient as an individual, and of avoiding unnecessary restrictions on diet which harass the temper. Undoubtedly this is a movement in the right direction, for the criticism has often been levelled at British spas that they compare unfavourably with foreign resorts in the attention paid to diet. Sir William Willcox referred to this criticism last May, during the course of a medical pilgrimage to the Scottish spas of Bridge of Allan and Strathpeffer. The patient whose salvation lies in the "detoxicating cure" which he advocated will certainly require support to combine modified fasting with a suitable spa water. Any patient indeed who sets out to take the waters at a spa requires to do so under the guidance of experts. And when such experts as his spa doctor and his maître d'hotel combine to cherish his digestive mechanism he may feel confident that he stands the best chance of profiting by a visit to a home health resort.

SURGERY OF THE HAND

The September number of *Surgery, Gynecology, and Obstetrics* is dedicated to Prof. Allen B. Kanavel, of Chicago, and the papers in it are written by his colleagues and students. Kanavel was one of the five who brought this journal into being, and he has always been associated with it editorially. He is a surgeon of wide interests, but to English readers he is particularly known as the author of "Infections of the Hand"—a book which has done more than any other to put the surgery of the hand on a sound foundation. Two of the papers in the Festschrift are concerned with this difficult branch of surgical work. In the first, Sumner L. Koch reports 32 cases of acutely spreading infection of the hand following trivial injuries, with full case histories. Cases of this kind are always very grave and the mortality is high, the deaths in this series including two doctors and two nurses. Koch, following Kanavel, firmly believes that early incision is extremely dangerous, the infection spreads by the lymphatics and incision can only open up further channels for absorption, without being able to attack the disease. In the treatment recommended large hot compresses are used, and also an electric cradle, rest in bed with forced administration of fluids being essential. Pus is evacuated only when definitely localised and healing is then rapid. Four types of cases are recognised: (1) those in which retrogression and recovery take place without pus formation, (2) those in which pus forms in the axillary glands after the local condition has settled, (3) those in which the inflammatory condition spreads up above the elbow, later retrogresses, and leads to local pus formation, (4) those in which the process proceeds steadily and rapidly. From the rapidity of lymphatic absorption Koch argues that primary cauterisation of the wound of entry can have no good effect.

Michael L. Mason describes 32 cases of chronic tenosynovitis, of which 23 were shown to be tuberculous. The volar aspect of the hand was involved in 80 per cent. of the cases, and in these the radial and ulnar bursæ seldom escaped. In the minority the digital sheaths were alone attacked. The remaining 20 per cent. were dorsal infections, and in these the sheaths of the extensor digitorum communis and of the extensor pollicis longus were always involved. In the early stages the sheath is only slightly thickened and contains clear fluid, later it is grossly thickened with granulation tissue proliferation, caseation, rice-body formation, tendon invasion and destruction, with secondary infection and sinus formation. It seems that conservative treatment is never permanently successful, and operation is therefore required. The disease must be eradicated completely and this taxes the ingenuity of the surgeon, both in his method of approach and in the repair of the tendons that may have to be excised. Suitable methods of solving both problems are set out in Mason's article.

AUTOPATHOGRAPHY

Among the curiosities of medical literature are the accounts of the symptoms and course of disease by doctors who have had bitter occasion to study them subjectively. Commenting on these in the Founder's lecture delivered on Sept. 28th to the Chartered Society of Massage and Medical Gymnastics Sir Humphry Rolleston cited descriptions by their victims of such diverse ills as angina pectoris, radio-dermatitis, and tuberculous warts due to direct infection. Every one of us could probably supply from his reading instances of classical accounts of disease processes which owe their graphic quality to personal experience. Among the common and non-fatal diseases our intimate knowledge of migraine, dyspepsia, and the psychoneuroses has been especially enriched by the critical notes of doctor patients; a record left by a medical acromegalic was recalled in our columns[1] on his death four years ago. In recent times the inconvenience of a sudden aphasia was the subject of a whimsical note contributed to *St. Bartholomew's Hospital Journal* shortly before his death, by Sir Frederick Andrewes, which is a clinical document of real value. Sir Humphry touched only briefly on this fascinating subject of "autopathography" in his comprehensive review of the occupational diseases of those in attendance on the sick. He regards exposure to infection and worry as the main reasons why the mortality of the medical profession is slightly above the average of all occupied and retired males. The worry factor may account for the reputed high incidence of angina pectoris and duodenal ulcer in the profession. The infective factor might be expected to affect surgeons more than physicians; Sir Humphry quotes Prof. A. H. Burgess as having ascertained the death-rate of surgeons on the staff of the Manchester Royal Infirmary during the first quarter of the century to be nearly five times that of their medical colleagues. In the case of post-mortem infections there is some evidence that they occur more readily after a holiday, when immunity due to repeated small inoculations has worn off. The list of well-known bacteriologists who have succumbed to the infections they were investigating is startling in its length. The occupational diseases of radiologists are, it is hoped, for the most part a matter of history. Sir Humphry pointed out a noteworthy contrast between the clinical effect of X rays and of radium, in that though carcinoma is a well-known sequel of X ray exposure severe blood changes are rare, whereas in radium workers carcinoma is very rare and anæmia is more readily produced. Drug addiction is naturally a danger in those who have easy access to powerful narcotics and stimulants. Finally, Sir Humphry dealt with the possibility that the development in a doctor of a disease to which he has devoted much study is due to auto-suggestion rather than to coincidence. A third possibility is surely that speculation on the significance of symptoms which they have detected in themselves has unconsciously directed and maintained the interests of certain doctors in certain channels.

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[1] THE LANCET, 1930, i., 631.

A SUGGESTED ALTERNATIVE TO PANEL PRACTICE

How might a State health service best be established? The report submitted by the Labour Party's national executive committee to the annual conference at Southport this week contains an outline of plans for bringing such a service into action. The compilers, for purposes of their report, assume that this development is desirable and they decide that, if it is, it should be based not on national health insurance (by extension to dependants, &c.), but on the health services of local authorities. "There are very grave deficiencies in the panel system," they say, "as regards both the type and standard of medical care provided and the existence of vested property interests in panels as such." They propose therefore that medical benefits should be taken away from health insurance altogether and that insured persons should in future receive cash benefits only, corresponding as far as possible to the rates of unemployment insurance at the time. The scope of the insurance scheme would be enlarged by including non-manual workers, with incomes up to say £500, but all these insured persons and their dependants would, like other people of similar means, look to their local authorities for medical service, both at home and in hospital. The local authorities would as far as possible take over the voluntary hospitals and other institutions by agreement. "The valuable services rendered by voluntary institutions are not unappreciated, but the provision of a fundamental service such as medical care should not be left to private charity." Their aim would be to provide something very much better than the benefits at present obtainable under national health insurance. The public health service should, it is felt, develop, especially in the towns, round a system of clinics. "These would be in effect well-equipped surgeries where the patient would receive the best examination, diagnosis and treatment—without the interminable periods of waiting so typical of the average hospital out-patients' department. This does not mean that the clinic should replace domiciliary medical attendance, but that it should be the centre round which such attendance and the other facilities of the Public Health Service should evolve." As soon as possible the panel, as such, might be transformed into non-saleable appointments in the public service—with abolition, of course, of insurance committees and the existing medical referee machinery. At the outset of the scheme most of the new domiciliary and institutional appointments would be apportioned among local doctors, mainly on a part-time basis, in a way roughly corresponding to the loss of panel and other patients the innovations would involve, but as these doctors went out of practice they would gradually be replaced by full time workers. While the ultimate aim of a unified public medical service would be to provide free medical care for the population as a whole—in the same way as primary education is now provided free—people over the insurance income-limit could go on making their own arrangements for private treatment, being entitled to go to the public hospitals on payment of reasonable charges according to their means.

MEDICAL RESEARCH COUNCIL

Dr. A. J. Clark, M.C., F.R.S., professor of materia medica in the University of Edinburgh, and Dr. J. C. G. Ledingham, C.M.G., F.R.S., director of the Lister Institute of Preventive Medicine and professor of bacteriology in the University of London, have been appointed members of the Medical Research Council in succession to Sir Charles Sherrington, O.M., F.R.S., and Dr. A. J. Arkwright, F.R.S., who retired on Sept. 30th.

Two special lectures on the operative treatment of facial palsy will be delivered at the Royal College of Surgeons of England in Lincoln's Inn-fields, W.C., on Wednesday and Thursday, Oct. 10th and 11th at 5 P.M., by Dr. Arthur Baldwin Duel, senior surgeon director of the Manhattan Eye, Ear, and Throat Hospital, New York. It will be recalled that a film illustrating Dr. Duel's methods was shown to the council of the College last April,[1] and some of his work has also been described by his collaborator, Sir Charles Ballance, to the sections of otology and laryngology of the Royal Society of Medicine.[2]

Summer Time, which commenced in Great Britain, Ireland, the Channel Islands, and the Isle of Man on Sunday, April 22nd, will cease on Sunday next, Oct. 7th, at 3 A.M., when the clock will be put back to 2 A.M. The hour 2–3 A.M. Summer time will thus be followed by the hour 2–3 A.M. Greenwich time.

Dame Janet Campbell has been invited by the Canadian Council on Child and Family Welfare, with the approval of the Dominion Government, to visit Canada, in the interests of maternal and child welfare, for October and November, and sails for Quebec to-day, Saturday.

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[1] THE LANCET, 1934, i, 859

[2] Ibid, 1934, i, 1285

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXI.—THE PROGNOSIS IN SPONTANEOUS AND TRAUMATIC DETACHMENT OF THE RETINA

DETACHMENT of the retina may be the result of several different eye diseases: for example, it occurs as a concomitant of sarcoma of the choroid, in albuminuric retinitis (especially in pregnancy), as a complication of retinitis proliferans, and so on. It is, however, with so called spontaneous or idiopathic detachment of the retina and that following direct or indirect injury to the eye that I shall deal here and of the results of the forms of treatment that have been recently introduced.

Until a few years ago the prognosis of traumatic and spontaneous detachment of the retina was very grave; few cases of cure had been reported, and some at least of these were cases of detachment complicating albuminuric retinitis (especially that complicating pregnancy) in which the prognosis is fairly good. In these cases the retina tends to become re attached to its bed, although pigmentary changes are seen in the retina as a result of which its function is permanently damaged.

In spontaneous and traumatic detachment of the retina many methods of treatment had been advocated and practised, but no single method was sufficiently effective to be adopted as a routine. So hopeless was the outlook that detachment of the retina was looked upon as being practically incurable, and a tradition of pessimism had become firmly established among ophthalmic surgeons. It had been noted that detachment of the retina in cases of albuminuric retinitis not infrequently became cured whereas in cases in which a rent was discovered no good result followed any form of treatment. In view of this observation, it seems odd that no one had made any attempt to close such a defect. We now know that in most cases of detachment a hole can be found in the retina, and that if one hole is closed the presence of another hole elsewhere means a persistence of the detachment until the second hole also has been closed.

GONIN'S DEDUCTION

The insistence by Jules Gonin that a retinal hole is a condition of detachment, and his brilliant work showing that a detached retina may become replaced when the hole is closed has completely revolutionised the treatment and outlook of this condition. Nowadays the chances of reposition of the retina are comparatively good, not only in the sense of preserving sight already present before operation, but also in the direction of the recovery of sight already lost. We are frequently asked by patients on whom we propose to operate for retinal detachment what the chance of success may be. It is still necessary to be very cautious in giving an estimate because two distinct problems are involved: (1) what chances there are of the retina becoming re attached, and (2) what amount of useful central vision is likely to be recovered.

In an early communication by Gonin (1929) he stated that in 81 cases the retina had been re attached in 53 per cent., and in 1932 in 221 cases, again 53 per cent. of the cases had the same result. Although by Gonin's method of operation other authors of papers had not obtained such good results, nevertheless the chance of the retina becoming re-attached varied between 25 per cent. and 53 per cent. Not all these results were exactly comparable, as some observers had operated upon almost any case of detachment of the retina that presented itself, whereas others carefully selected their cases and only operated upon those which promised a reasonable chance of success.

One very important factor is the duration of the detachment. For instance, the Moorfields figures showed that of the first 200 cases operated upon, when no very strict selection of cases was made, there were 40 per cent. of successes among cases of six weeks' duration, 28 per cent. among those of six weeks' to three months' duration, 22 per cent. of those of three to six months' duration falling to 10 per cent. among cases that were of more than six months' duration. Again, of the successes obtained 65 per cent. resulted from one operation, 28 per cent. from two, 5 per cent. from three, and roughly 2 per cent. from four operations. It will, therefore, be seen what an important factor the duration of the detachment has upon the chance of replacing the retina. Various accidents also occurred which militated against good results, such as the formation of secondary holes, vitreous hæmorrhages, uveitis, and thrombosis of a vortex vein. In spite of this the results of treatment were satisfactory in 29 per cent. of cases.

Gonin's operation of ignipuncture was followed later by the Guist operation of multiple trephinings of the sclera with the use of caustic potash to the exposed choroid, as a result of which a much bigger defect in the retina might be attacked at one operation. The procedure was extremely tedious both for patient and operator, but the Moorfields figures showed 50 per cent. of successes although the complications mentioned above occurred in about the same proportion of cases.

THE LARSSON OPERATION

In August, 1932, the Guist operation was abandoned at Moorfields for the Larsson operation. The principle of this operation is essentially the same as that of Guist in that multiple areas of choroiditis are produced so as to include the retinal defect, but the effect is produced upon the intact sclera by means of diathermy. A very small active electrode is placed upon the sclera in an appropriate place, and by passing a current of 60 ma. for about eight seconds a patch of choroiditis is produced immediately underneath. This procedure is repeated sufficiently often in the neighbourhood, the retinal defect is segregated, and upon puncturing the sclera and choroid the subretinal fluid escapes, and the retina then comes into contact with the choroid. The results of this operation have been very much better than those obtained by other means, and 76 per cent. of successes in replacement of the retina have followed with a diminution of post operative complications.

It must be remembered that though these statistics are of great importance in allowing us to set a value upon various means of treatment, we must be very careful in their use when giving patients an opinion of their chances of success after operation. Each case must be considered individually.

When we were depending upon ignipuncture cases with small holes or tears gave by far the best prognosis, whereas cases with large tears and disinsertions gave a much worse prognosis because the operation had to be repeated on several occasions owing to the size of the defect. Since the introduction of diathermy cases of *disinsertion* gave a good prognosis as frequently the retinal tissue involved is relatively healthy and the defect is easily accessible being so near the periphery.

Cases with *large or multiple rents* give a [illegible] prognosis not only because it is difficult to [illegible] such large defects, but also because we are dealing with degenerated and unhealthy tissue.

INVOLVEMENT OF THE MACULA

Apart from chances of replacing the retina by operation there is another point in prognosis, particularly from the patient's point of view It is satisfactory to the surgeon when he succeeds in replacing the retina, but patients judge the success not only by the increased field of vision provided by the operation but also upon the central vision that results. This introduces quite another point in prognosis

Unfortunately a very high proportion of retinal defects occur upon the temporal side, and there needs to be only quite a small detachment of the retina to involve the macula Once the macula has become detached it can hardly be expected that good central vision will be regained. There is, however, a tendency to improvement of central vision as time goes on, partly due to clearing of the vitreous and partly apparently to some recovery of the macula Cases occur in which a vision of 6/24 a few weeks after the operation has improved to 6/12 during the course of a year, and even better results have followed in exceptional cases. In any event a patient may be promised an increase in the field of vision in a case of replacement of the retina, and the probability that the central vision present at the time of operation will be retained and that some improvement will be noticed when the macula has been involved in the detachment.

RARE TYPES OF DETACHMENT

A more positive opinion may be expressed with reference to three unusual types of detachment of the retina.

Occasionally one sees a patient very soon after a direct or indirect injury to the eye, or in whom certain phenomena, such as flashes or the sudden onset of vitreous opacities, have drawn attention to the eye Such patients have a recent tear of the retina with only a very small and localised detachment, perhaps confined to the operculum of the horseshoe-shaped tear usually found If a patient with this lesion is immediately submitted to a diathermy operation over the site of the tear, even without a subsequent scleral puncture, an excellent result will follow

Another type of case to which attention has recently been drawn is that in which there is a small globular detachment near the periphery; the retina has a peculiar fenestrated appearance, and no defect can be found The detachment is sharply localised and is probably of the nature of a cyst Such detachments seem to be of slow progress and may be multiple If a diathermy operation is performed on the sclera overlying the cyst, and the cyst is then evacuated, progress seems to be uniformly good

Finally there are cases of detachment of the retina following operation for extraction of cataract, and these may be divided into two groups—those following extraction of senile cataract, and those following a needling operation for soft cataract

The outlook following operation in these cases is very poor, and this is not surprising when one considers the fact that the eyes have already before detachment undergone a more or less serious operation. Moreover there are great technical difficulties due to the altered refraction of the eye and to what is usually a small opening in an otherwise opaque capsule through which observations have to be made to find and locate any defect in the retina. In cases of detachment following extraction of cataract the outlook is a little better, and in about 10 per cent the retina has been replaced; but in detachment following an operation on soft cataract no success has to my knowledge been recorded.

CONCLUSION

It does not seem likely that we shall achieve a much higher percentage of successes in the direction of replacement of the retina (the percentage of success is already surprisingly good), but we may hope for a better result in the direction of preserving central vision: this will depend almost entirely upon the early recognition of defects in the retina, so that an operation may be performed before the retina has become extensively detached, and more especially before the macula has become involved

I wish to record my great indebtedness to Mr. C D. Shapland, whose papers, incorporating the Moorfields results, have been the source of much of this article They are to be found in the transactions of the Ophthalmological Society for 1932, 1933, and 1934 and the *British Journal of Ophthalmology*, 1934.

CHARLES GOULDEN, O B.E , M D , M Chir , F R C S,
Ophthalmic Surgeon to the London Hospital, Surgeon to Moorfields Eye Hospital.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg Capts C V Griffiths, D S O , to *Boscawen* for Portland Hospital, and H F Briggs to *Africander* for Cape of Good Hope Hospital Capt Griffiths has held the chair of medicine at Haslar and deputised for the medical director-general of the Navy

Surg Lt -Comdrs G A Miller and C H Birt to *President* for course

Surg Lt B S Lewis to *Victory* for R N B

ROYAL NAVAL VOLUNTEER RESERVE

Surg Lt G J Murray to *Effingham*

Proby Surg Sub-Lt W S Miller to be Surg Sub Lt

ARMY MEDICAL SERVICES

Col J Heatly-Spencer, from Asst Professor of Tropical Medicine, to be Professor of Tropical Medicine, Royal Army Medical College, and Consulting Physician to the Army.

ROYAL ARMY MEDICAL CORPS

Lt C B R Pollock to be Capt

ARMY DENTAL CORPS

Capt N F Smith to be Maj

Lt W A O Roe to be Capt

TERRITORIAL ARMY

Capts N F C Burgess, J C Adam, and C A Cowe to be Majs

Lt. T T S Hall to be Capt

Capt R Anderton resigns his commn

TERRITORIAL ARMY RESERVE OF OFFICERS

Maj C H Welch, having attained the age limit, retire and retains his rank, with permission to wear the prescribed uniform

ROYAL AIR FORCE

Flying Offr G Gilchrist is promoted to the rank of Flight Lt

Flight Lt (Hon Wing Comdr) J Valerie, O B E relinquishes his temporary commission on complet of service and is permitted to retain the honorary rank of Wing Comdr

Flight Lts P J McNally to Aeroplane and Armam Exper Estab , Martlesham Heath , J C Neely to Centra Medical Estab

INDIAN MEDICAL SERVICE

Majs to be Lt -Cols P Savage, Jamal-ud-din, H G Alexander, P D Chopra, and A S Fry

OPENING OF THE MEDICAL SCHOOLS

IN several of the London medical schools the winter session opened last Monday with inaugural addresses to the students. Below we publish extracts from them. Sir John Simon spoke at Westminster, Dr MacCormac at Middlesex, Prof Langdon Brown at St George's, Dr MacKeith at the Royal Free, and Sir John Rose Bradford at University College Hospital.

CULTURE AND SPECIALISATION

By SIR JOHN SIMON, G C S I

H M SECRETARY OF STATE FOR FOREIGN AFFAIRS

AN important practical problem confronting many young men entering upon a professional career in modern conditions is how to avoid losing contact with, and interest in, that wider range of subjects, especially those associated with taste, judgment, beauty, and truth which were called literature, music, art, and the more philosophical aspects of life. They are in doubt how to select which, among this range, will make a secondary enthusiasm, and enable the young man to live a life which is not only kept in touch with patients and hospital wards, or law courts and wigs and gowns, but also with the spirit of man and the splendour of his life, with some at least of the artistic and literary achievements which make the warp and woof of the fabric of human civilisation.

Let us consider this problem together. I am not, of course, referring to the long list of famous men who started their training or even their professional career as medical students or doctors, but who ultimately found their niche in fame elsewhere. At the Bar many are called but few are chosen, and there is a constant movement away from the practice of that profession into other fields. The same thing is true of medicine. I like to think of some of the famous names, of which your splendid profession may be especially proud, of men who began in the practice of medicine. You have a very strong line in poets. John Keats was a student of St Thomas's and of Guy's, and in due course became a qualified surgeon. Oliver Goldsmith was a rather more doubtful case, no one is quite sure whether he actually became a qualified doctor with a degree, but the general belief is that he accelerated his own death by presuming to prescribe for himself with undue freedom and frequency the antimonial preparation known as Dr James's powder. You have a splendid modern name among the poets of a man who practised in very high positions the profession of medicine for a large part of his working life before he gave up medicine and devoted himself to poetry, ending by being the Poet Laureate. Robert Bridges was Assistant Physician at the Children's Hospital and Physician at the Great Northern Hospital. He practised here in London a large part of his working life, but he preserved his vigour in age so well that it was not until his 85th birthday that he published the most splendid and beautiful of all his poems, The Testament of Beauty.

The most curious case in medicine is that of Thomas Dover, the original inventor of Dover's powder. He sailed from Bristol as second in command of a privateer in company with William Dampier, buccaneer, pirate, circumnavigator, captain in the Navy, and hydrographer. It was Dr Dover who discovered on his voyage the original Robinson Crusoe. There after he resumed practice and became famous as the "quicksilver doctor," owing to his addiction to prescribing metallic mercury. The list of famous men whose training and profession included medicine, but whose names are remembered for other achievements is endless, and includes Schiller, Scaliger, Rabelais, Marat, and Guillotine.

Many other such cases might be mentioned, but I am not thinking of those whose origins were in medicine and who afterwards gathered asphodel in other fields. I am rather thinking of those who have pursued the medical profession throughout their lives and yet have maintained and cultivated some secondary pursuit of culture, and have thus always had active contact with the widest range of beautiful thoughts and things. If I were merely to rely on my own memory of friends, I should place very high in that list the honoured name of Sir Norman Moore. I used to belong to a very interesting dining-club with Dr Norman Moore, of Bart's, I have never in my life enjoyed a pleasant, graceful flow of wit, allusion and information more thoroughly than in his company.

strumming on the piano, his friend came in and said, "I thought it could not be the maid" I believe that people who really and truly enjoy music will be able to maintain that tremendous pleasure throughout life better almost than any other pleasure can be maintained—a constant heightening of exhilaration and delight It is my misfortune that, though I tolerate music, I do not really understand it I would strongly urge the busy practitioners of Harley-street of the future not to accept the invitations of fashionable ladies to their musical evenings to 'hear the best violinist in town if they do not like music! If they do like it, then they should accept any invitation they can get

In the second place, you must lay the foundations quite firmly now, and resolve to maintain them through these difficult years when nothing seems to exist on the horizon but the forthcoming examination, and when that becomes portentously bigger and portentously nearer with every passing hour. Did you ever read a delightful essay of the late Lord Grey, On the Pleasures of Reading? It included, I remember, a story of the former Mr. Auberon Herbert, a most hospitable and cultivated gentleman, who asked a number of friends down for the week-end to his country place When they arrived on the Saturday, he came to the hall and greeted them as a good host does, and then asked, "Now, what are you going to do? *We* are reading" He was an admirable host, possessing the first qualification for that office he left his friends to decide for themselves If you have a taste for serious reading, whatever it is—the classics, poetry, history—a great deal is to be done by keeping it up, even though it be by little every week My own line, modest as it is, is to read the classics When I say "the classics" I mean the Loeb Classics, that is to say, the books which have the Latin or the Greek on one side and a very good English translation on the other! It is a real consolation, it is astounding how comforting it is, if you have had a thoroughly bad day, to return to these ancient founts and to reflect that the people who wrote, read, and lived in those days had similar worries which are not on record, and that it is quite possible that in another 30 years' time you will have forgotten about it all yourself

Another consideration which is perhaps particularly appropriate for those studying medicine is that in the nature of things the modern doctor is bound to have a certain acquaintance with some modern languages I believe that without any great effort it is possible enormously to add to the pleasure of a busy life if you make yourself reasonably familiar—if possible, facile—in some spoken foreign tongue My own experience is that it is all nonsense to say that Englishmen cannot speak foreign languages There are many races and nations in Europe who are lamentably backward in that respect, but on the whole the cultivated Englishman or Englishwoman is not one of them A third thing that I would suggest is the practice of learning by heart. Naturally, this is in the nature of an autobiographical confession, and I stand before you, perhaps, rather as a warning than an example A great many people believe that you cannot learn by heart after you have passed a certain age. Of course, I do not know what the psychologists of the Westminster Hospital school may say about it, all I can say is that you can If you have to go on a sea-voyage there are few better things to do than to determine that you will learn a certain number of things by heart I make a practice of it; I bore my relations and friends for the rest of my life by quotations, and when I look at the book I find that I have quoted them wrong!

I would put down a fourth thing I do not myself much believe in people of the same profession talking shop to one another at meals In this respect the law is very honourably distinguished: no lawyers ever talk shop to one another at meals. On the other hand, there is nothing more interesting than hearing other people talk their shop, and I am content to sit and listen, and occasionally provoke by an ignorant and impertinent demand, to the end of time if only I can get someone who knows his own subject well to talk about it It greatly increases the pleasure of social contact

Forgive me if in conclusion I mention one other compartment which I hope will not be overlooked Gentlemen of the Westminster Hospital school, do not enter upon your coming career and put on one side as impossible, or unworthy of attention, or uninteresting, or degrading, a decent interest in public affairs. The future of our own country does not depend upon the performance of a limited list of politicians, it depends upon the discharge of their responsibility by the people of this land, led, as they are always willing to be led, by friends who meet them in contact and in service I should like to think that the country doctor on his rounds, that the great man in the medical quarter of London, that the specialist occasionally called in at a critical hour, do not forget that they who are serving and the patient who is being served are both citizens of a great community responsible for its public life The happiness and future of each depend upon nothing more than that it should be the religion of every honest man to help to see that his country is well governed

The times are very useful for getting this wider range of sympathies The old fierce oppositions between different kinds of knowledge and learning are going, just like much of the old opposition between religion and science You will remember the quatrain

> "How seldom it happens, if ever,
> That people behave as they should,
> The good are so *harsh* to the clever,
> The clever so *rude* to the good"

Forty years ago the classical authorities of a great English university described science as "stinks" The literary scholar thought, and very strongly hinted, that the student of science was materialistic The man of science thought the professors of humaner learning and letters were vague—and indeed they sometimes were A most curious thing which is happening as I understand it, is that philosophy and mathematics are coming closer together in this age than they have been at any time since Plato. I read the Republic of Plato 40 or 50 years ago, and others of Plato's dialogues, and came across these mysterious passages which show quite clearly that this old Greek painter thought somehow that the mathematics he knew and the philosophy he was studying were integrally related. Read Sir James Jeans's last address to the British Association, and see if Plato's ideas are not coming true Plato, of course, was not always right In his ideal republic he had particular method for choosing the doctors Socrates proved by irrefragable reasoning that nobody could cure a disease who had not had it, and consequently that the sick persons ought to be the doctors, and the greater the range of your disease the better doctor you were It seemed to follow that there was no medical aid for a fatal complaint.

We have, therefore, these prospects of improvement On the other hand, this thrust and rush of life is something that has never been known in the world before You remember I daresay, Matthew Arnold's lines in The Scholar Gipsy, when he speaks of the days which he regarded as already past

> "When life ran gaily as the sparkling Thames ,
> Before this strange disease of modern life
> With its sick hurry, its divided aims
> Its o'ertax'd heads, its palsied hearts, was rife

But Matthew Arnold lived in a peaceful, slow moving age, and had not the faintest conception of what was coming upon the generations to succeed him

That is my appeal to the students of this medical school Pursue with unrelenting vigour and determination the professional course upon which you are set No man has ever achieved either usefulness or success *in a really great profession* who has not brought those qualities to the task But remember that you, too, are entering into a great inheritance and it is for you to hand on that inheritance in all its width and splendour

In one of his books—I think it is "The Autocrat at the Breakfast Table"—Oliver Wendell Holmes wrote a poem about the chambered nautilus, the point of which was that, as the creature living in its shell grows, it adds a new and bigger chamber to its shell The last verse of that poem gives me my conclusion —

> "Build thee more stately mansions, O my soul,
> As the swift seasons roll
> Leave thy low vaulted past
> Let each new temple nobler than the last
> Shut thee from heaven with a dome more vast
> Till thou at length art free
> Leaving thine outgrown shell by life's unrestful sea"

OUR PROFESSION

By Henry MacCormac, C B E , F R C P
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SINCE 1886 when the Medical Act was established by law, all those who practise medicine have been united into a single body with equal and similar rights This was not always the case Formerly there existed three separate estates—physicians surgeons, and apothecaries—each with clearly defined functions and carefully guarded privileges outside which none might trespass

To appreciate the existing relationship, it is necessary to recall that while in ancient times medicine and surgery were united, in the feudal period the physician was an ecclesiastic forbidden by canon law to shed blood subscribing to the feudal notion in monkish and scholastic minds that anything that savoured of handicraft was menial and by so much degrading (N G Horner) The surgeons, on the other hand, were mostly unlettered craftsmen following a subordinate office and were often deficient both in learning and scholarship With few exceptions surgical apprentices were drawn from the humblest ranks Thomas Gale writing in the sixteenth century, in "An Institution of a Chirurgion" says that "Few that have wel brought up their sonne will put him to the arte, because it is accounted so beggarly and vile"

The third estate, the apothecaries, were merely compounders and vendors of drugs at one time associated with the grocers with whom they shared the drug trade Their wares and shops were subject to inspection by officials of the College of Physicians and they were expected to maintain a certain standard and submit to certain defined regulations as shown by the rules laid down by William Bulleyn for the guidance of apothecaries in the sixteenth century In these rules the apothecary is told to meddle only in his vocation and to bear in mind that he is only the physician's cook He is however, allowed to open well a vein for to help pleurisy, and is instructed to have two places in his shop, one the most clean for physic, and a baser place for the chirurgic stuff

To day our profession is governed by the General Medical Council, a statutory body whose duty it is to protect the public by maintaining a standard of professional conduct and competence This tradition of service is not a new one it was already established in the reign of Henry VIII when in 1518 by charter, the King incorporated the College of Physicians giving them authority to examine and license every person proposing to practise physic in London and seven miles beyond The authority *vested in the College was comprehensive* The Censors Board constituted a tribunal which was empowered to try, fine, and even imprison any who attempted to evade the regulations, and the Physicians were not reluctant to exercise their rights This was not mere professional prejudice A central authority of this sort, in a sense the forerunner of the General Medical Council of to day, was very necessary, as we may learn from the reports of the proceedings of the College against irregular practitioners from which the following is taken

> One Simon, an astrologer, was brought before the College and charged He boasted that he made use of no other help for the discovery of distempers but his astronomical almanacs and that by the heavenly signs, aspects, and constellations of the planets he could presently know every disease Being examined in the elements of astronomy as well as the elements of physic he answered so absurdly and ridiculously that it caused great mirth and sport among the auditors He was fined and imprisoned This however, did not end his career, for nine months later he again appeared confessing that he had prescribed a compound water to a gentleman in a burning fever, upon the taking of which the gentleman immediately died

The Censors Board did not punish all who came before it Some were approved and even specialists were admitted We learn that John Luke in 1561 was granted a faculty to practise diseases of the eye, provided he limited his treatment to the use of external remedies This would seem to be the earliest example in England of a diploma conferred upon an ophthalmic surgeon

Following the charter of incorporation of 1518 two other Acts in the reign of Henry VIII had given the physicians further privileges and the contemporary surgeons now found it necessary to settle and regularise their position Their aim was to raise their calling from that of a trade to a profession to limit the practice of quacks, and to improve the standard of surgical education They first sought an alliance with the physicians, and when this failed they amalgamated in 1540 with the Barbers Company, a union which lasted for over 200 years This association was mainly one of convenience "From first to last" Sir James Paget has written "and even during their temporary conjunction with the Barbers Company real surgeons held themselves apart as a distinct body There was no fusion of the two callings" The Act by which the Barbers and Surgeons were united provided what the surgeons should and should not do and limited the operations of the barbers to certain forms of minor surgery such as blood letting The apparatus symbolical of this is to be seen to-day outside many barbers' shops, the pole to be grasped by the patient the red stripe representing blood, and the brass dish into which the measured quantity of blood was received

The surgeons' training as regulated by the Guild depended upon a system of apprenticeship He apprentice was usually about 14 years old, and the term of servitude lasted seven years This introduction to surgery by apprenticeship prevailed until recent times, and we know that apprentices who were bound to hospital surgeons such as Hunter and Abernethy paid for this privilege fees varying from £500 to £1000 The Barber-Surgeons were a progressive body Aware of the importance of a knowledge of anatomy for their craft, they took immediate steps to provide a series of lectures for which they were granted annually the bodies of four criminals executed at Tyburn Each anatomy lasted three days, and the lectures were open to the public. At their conclusion a feast was given to which the more distinguished visitors were invited Samuel Pepys who was present on one occasion describes the procedure as follows :—

> "About eleven o'clock Commissioner Pet and I walked to the Chyrurgeons Hall . where we were led into the theatre and by and by comes the reader Dr Tearne with the Master and Company in a very handsome manner His discourse being finished we had a fine dinner, many Doctors of Physic, and we used with extraordinary respect."

No surgeon could practise in London or within a radius of seven miles without a licence which was granted after examination. Rejections were not infrequent, and when the candidate was unusually ignorant the coroner was invited to hear the examination. The Surgeons also instituted a system of consultation by which cases of difficulty were referred to a special committee. Failure to observe this rule was severely punished.

One case reported in 1635 has an historic interest Wm Kellet was censured for failing to present Mr Kinnersley's maid who died in his charge In his defence he stated that Mr Doctor Harvey, being called to the patient, said there was no fracture, that the tumour on the temporal muscle could be dispersed, and that the vomiting came from a foulness of the stomach The marginal note summarises the full proceedings in four words, not very complimentary to the discoverer of the circulation of the blood : "Dr. Harvey's ill-practice"

The eighteenth century was marked by two events which were to have a profound effect on the future of medicine , the beginning of our system of voluntary hospitals and the dissolution of the Barbers-Surgeons Company. The severance of the Barbers from the Surgeons took place in 1745, but it was not until 1800 that the Royal College of Surgeons was established. The surgeons, largely through their own fault, allowed the apothecaries to gain the greater share in the control and education of the bulk of the profession The status of the apothecaries had been entirely changed after the Great Plague of London in 1665 when the medical care of the sick poor fell into their hands. They had established themselves as a humbler branch of general practitioner, and in 1815 consolidated their position by the Apothecaries Act which secured among other things a minimum qualification in medicine. Following the collapse of the Barber-Surgeons there grew up private schools of anatomy, of which the Windmill-street School was the most celebrated It possesses a special interest for us, because out of it the medical school of the Middlesex Hospital developed.

A good deal was expected of the medical student. In the year 1830, as Sir D'Arcy Power has pointed out, the programme was as follows · Midwifery from 8 to 9, chemistry from 9 30 to 11 three days a week, and medicine at the same hour on the other days. Walking the hospital daily from 1 till 2 Anatomy from 2 to 4, with demonstrations at 11. Physiology from 6 to 7 30, followed by surgery until 9 Materia medica twice a week in the evening. Natural philosophy optional and a meeting of the Medical Society every Saturday evening also fortunately optional This left about three or four hours daily for food, exercise, and recreation There were, however, many who were less thoroughly trained, or indeed, were hardly trained at all, and unqualified practice by illiterate persons was rife throughout the country There was no means of distinguishing between the genuine doctor and the imposter This state of affairs called for reform, and in response to this need the Medical Act was passed. The circle is completed. Throughout 400 years, by a slow process of evolution, the three estates—physicians, surgeons, and apothecaries—originally distinct, have progressed and developed to be united into the single body of our profession.

WE HAVE REASON TO THINK

By W. Langdon Brown, F R C P.

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Hunter's famous aphorism "Don't think, try" may often have been misinterpreted, but never more sardonically than by a friend of mine, who commented that out of respect to him the medical profession for more than a century had been trying not to think. And although we realise that Hunter was merely advocating experiment rather than speculation, there is a sting of truth in the comment. A hundred and fifty years ago the need for the collection of data was paramount ; to-day there is at least an equal need for the data to be assimilated and coordinated by careful thinking

If Socrates discoursing with Phaedro on the banks of the Ilissus could not define thought, neither can I be expected to do so. But I like Rodin's sculptured vision of "Le Penseur" At first sight that low browed squatting figure, brooding with chin resting on knuckle, hardly seems to typify thought, until one realises that it represents the dawn of thought, the painful gestation of ideas in the caveman's mind. At what stage precisely do the twin streams of temperament arising from the internal afferent impulses and from perceptions of the outside world, ascending through chains of association cells enriched by experience, *attain in the highest levels of the* to the dignity of abstract thought ?

You will, I hope, forgive me if I attempt a biologica rather than a metaphysical approach to a problem I am not prepared to solve. For I do believe that this method has in comparatively few years carried us further towards a comprehension of the of man's mind than centuries of metaphysics ha achieved. As Robert Bridges said "Man's R is in such deep insolvency to sense " that :

> "Not without alliance of the animal senses
> Hath she any miracle"

One may fairly say that one of the most recen achievements of man's reason is his recognition o how unreasonable a being he is. To quote the sa poet :

> "How small a part of Universal Mind can conscient R
> claim !
> 'Tis to the unconscious mind as the habitable crust is t
> the mass of the earth"

But his narrow crust of reason has a great, and Rodin saw, a painful task. It has to coördina here and repress there these streams of affe impulses which pouring through the basal gangl have gained in turbulence and in turbidity by su emotional depths inherited from long-dead ancesto as well as those acquired in earlier life. It is no lig task to provide for the precipitation of the mud, E rification of the streams and, to pursue the simile, efully to employ them to irrigate the higher centres r the fertilisation of thought

Perhaps, as Adler says, nothing is quite so conscious d nothing quite so unconscious as we imagine deed, the frontier is an indefinite and changing one ut reason properly used will agree to recognise the ace that the emotions should be accorded in life

It is perhaps due to mental attitudes in the past hich tended to exaggerate the rôle of reason that ere has arisen an undoubted and undue depreciation f reason in these latter days For whole nations olitics have become total abandonment of the right f judgment into the hands of a dictator, while a ligious movement of the day relegates the individual onscience to the guidance of a group I do not tend to discuss either politics or religion I merely ish to illustrate how widespread is the individual's ack of confidence to day in his own power of reason ut perhaps the process can be best observed in ertain literary movements which, starting with an ngry reaction against the intellect, such as D H awrence, for instance, displayed, has gradually eteriorated into what appears to me to be mere aby talk Whatever this may mean to the writer imself—or herself, I must add, since Gertrude Stein s one of the most notorious exponents of the "cocky ocky, henny penny" style of writing which was ormerly reserved for the delectation of the nursery—it can, from the nature of the case, communicate very little to anyone who does not possess the key

That inspiration wells up from the unconscious or at least the subconscious, would be generally admitted, but just as the highest level of the brain selects the sensory impressions to which it will pay attention, so reason must arrange and select the messages from the emotional levels To day only too often a writer fishes up from the unconscious what appears to him to be a pearl worthy to be treasured, but which seems to the onlooker nothing but a worthless pebble Why are other people's dreams so utterly boring to everyone except a psycho analyst? Because the narrator cannot reproduce the emotional effect which accompanied the dream The artist by judicious and intellectual arrangement of the material derived from this inspiration, may be able to convey the thrill, but the writers against whom I am protesting persist in hurling the crude material at one in raw slabs

Another barrier to comprehension they raise is this On the way up from the deeper layers an impulse may run through a series of association cells, stimulating memories which are entirely individual to the person who experiences them If he flings those associated ideas at us without a clue he is really speaking in a foreign language Although this method is used even in prose, it is of course more frequently employed in what is called modern poetry Mr T S Eliot, for instance, who is bleakly austere in prose, says that in poetry meaning only plays the part of the lump of meat in the turned up end of the dog stealer's trousers Meaning is only required to focus the reader's attention until the poem has him in thrall Well that may be so, but I still hanker after that bolt of meat when I read an alleged poem like this

If it was to be a prize a surprise
If it was to be a surprise to realise
If it was to be if it were to be was it to be
What was it to be It was to be what it was
And it was So it was As it was As it is
As it as it is It is and as it is and as it is
And so and so as it was
Keep it in sight alright

"Milton, thou should'st be living at this hour England hath need of thee"

And as to prose, what is one to make of this extract from James Joyce's latest lucubration?

"The flossies all and the mossies all they drooped upon her draped brimfall The bowknots the showlots, they wilted into woeblots The pearlagraph, the pearlagraph, knew whitchly whether to weep or laugh For always down in Carolinas lovely Dinahs vaunt their views"

This is bad enough but it is even more serious when a critic tells us that this is slapstick raised to the status of art, and that the delight which one finds in such words is sharper than the ordinary pleasures of prose Surely it is time, in the name of reason, to challenge this pretentious high brow nonsense and to call its bluff

It is interesting to recall, by the way, that a tendency to link words together by sound rather than by meaning is a reversion to an infantile mode The repetition of such sounds is attributed to the control over the speech not being as yet completely developed It is shown in the first words the child speaks "mamma, papa, nana," and this kind of repetition is to be noted in the stories which delight very young children It is therefore not without significance that one of the new artistic movements christened itself "Dada"

Well, the more youthful members of my audience may say, how can you expect to appreciate the new beauties that are being revealed by these modern writers? You are so hardened by established conventions and outworn modes that naturally you are deaf to this new music Very well, then let me ask you to listen to the views of Mr John Sparrow, an eminent but youthful critic His recent book "Sense and Poetry" is a devastating criticism of this new school May I quote a few passages

"We are now to be told that experience hitherto taken to be the raw material of art, should be accepted as its finished product One of the chief reasons for the unintelligibility of modern verse is the predominance of associations that are personal to the writer Egoism is carried so far that poems are written for the appreciation of which a complete account of their author's external and internal life is needed Those who write unintelligible poetry find themselves justified by the beliefs of an increasingly popular school of thought which in effect denies the existence of the intellect To make the fullest use of the associative value both of words and of what words stand for has been the task of literature since literature was first attempted Modern writers therefore do not break new ground in paying attention to the effects of association, what is new in their writing is the result of their paying attention to association alone and exploring it so thoroughly that meaning is entirely or almost entirely superseded"

Or as Mr Desmond MacCarthy says, it is hopeless to reproduce in print the very texture of consciousness, such as leads Mr James Joyce to record the jibberings of the idiot or flat headed savage who talks unheard in the backward abyss of our minds and sometimes screams audibly in delirium

Mr Sparrow has clearly defined the symptoms, but as medical men we want to go behind the symptoms and determine the causes at work, here as elsewhere Mr Gerald Heard in "These Hurrying Years" has attempted this task He attributes them to a growth in self-consciousness a new realisation of what the mind is doing While this development has seemed to many onlookers only "the treason of the clerks the betrayal of reason the blind escape into childishness superstition and self-comforting illusion" he does not so regard it What we have to focus upon is the force the cause which has produced that reaction He thinks that we need not be unduly perturbed by the new experiments, since they are all part of a growth which, though largely blind to-day, is making for a new synthesis He admits that this may be too optimistic, and I think it is clear that the pendulum has swung too far. I have great belief in the capacity of life to adapt itself to its environment But of one thing I am sure, we shall never achieve a new civilisation by denying reason its place Even though we realise that it does not include the whole of life, it must have the final word Earlier in the year I quoted a saying of Gaskell's which will bear repetition now—"The race is not to the swift, nor to the strong, but to the wise"

When I was seeking for a title to express the viewpoint to which I wished to direct your attention, I remembered an essay by that charming writer, Stephen Paget, in which he said ·

> "Great words and phrases (may) come down in the world For instance, I have reason to believe—a phrase of noble birth and of the utmost refinement—is at the mercy of gossip I have reason to believe that the conductor gave me sixpence short on purpose, and so forth Quick, let us do honour to this old phrase—for *it is descended from two of the stateliest of all words*"

It occurred to me to adopt that phrase, hoping thus to make a plea for the restoration of reason to its throne on the highest level of the nervous system—the last to come, the first to go, but all the more to be cherished on that account, reason is the judge and assessor of our instincts and our emotions, which, however necessary for driving energy, if uncontrolled are but blind leaders of the blind We have reason by which to think .

THE INSTITUTES OF MEDICINE

By M H. MacKeith, D.M.

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Like a certain Dickens character I have a "King Charles' head"—a subject which puts itself into any topic of conversation Mine is the Medical Curriculum, it is a phrase of grim implications to many, but I feel it has been misjudged. Years ago, as a student, I found harsh words to write about the General Medical Council—the Council of *Education* as well as of Registration—and of the burdens they laid on the shoulders of their unfortunate victims Advancing age or possibly wider experience has brought me to the penitent conviction that all these apparently irksome regulations arise from a single-minded and sincere desire to ensure that the medical practitioner in Great Britain shall be properly qualified

A point I wish to develop here is my profound belief in the essential unity of the medical student's training and to deny that there is any fundamental reality in the division which is so strongly suggested by the different "subjects" and by the separate examinations Having stated this belief I find myself faced with the question of where, in point of time, to start Should school training, home surroundings, prenatal psychology, and hereditary influences be taken into account? The line must be drawn somewhere and I propose to begin with the normal entry to the medical school—though I must say that the best brief advice which could be given to a medical student is "Choose your parents wisely"

I suppose the first studies to be considered are the ill-assorted three—chemistry, physics, and biology The first two have long been accepted as leading closely parallel lives but we must now look on them as twins, and uniovular twins at that. There is no matter of real interest in the study of living organisms which can be truly looked on as in the domain of one of these subjects and *not* of the other.

There is sometimes a tendency to look on physics and chemistry as being dull—as a discipline in mental gymnastics. Surely the preferable attitude is to consider them as representing the rules of the game—the game that is played throughout our universe by inanimate and animate objects alike, astronomically as well as gastronomically Still, in many ways it is in the step-sister, biology, that I am most interested at the present Passing suddenly from a lack of attention or even a positive neglect in her younger years to the enjoyment of a much wider freedom later on, she serves as an admirable illustration of nursery tradition Even here there are, I venture to think, imperfections, the balance of biological teaching in schools tends yet to be Victorian The attitude is changing rapidly and widely as well, it is not only the so-called "educated classes" who now evince a lively interest, when they get the opportunity, in simple animal dissections, and *discussions of function. The change is of immense* importance in the advance of the practice of medicine, some of the dread mystery of disease will disappear from the patient's mind and opportunities for earlier treatment thus arise

Before passing on to the pre-clinical subjects of the present day, I am going to read a quotation from Osler.

> "Each one of these is a science in itself, complicated and difficult, demanding much time and labour for its acquisition, so that in the few years which are given to their study the student can only master the principles and certain of the facts upon which they are founded Only *so far as they bear upon a due understanding* of the phenomena of disease do these subjects form part of the medical curriculum, and for us they are but means—essential means it is true—to this end"

May I emphasise the words "master the principles" The acquisition of a number of "facts" likely later to prove useful in the practice of medicine is *not* appropriate study of the subject

When Osler was appointed, almost exactly years ago, to teach the Institutes of Medicine McGill the subject comprised physiology, histolog and pathology. And this is the interpretation wh I put on my title.

I do not wish to deny the right of anatomy to place, and even a quite extensive one in the pr clinical period, but I think that the greater share the whole time allotted to it should be in the earli part of this pre-clinical period and that the oth subjects of the London second M B should find th fuller representation at the later end I believe the essential turning-point in the medical co is not, where it now tends to be, on passing second M B but about six or *nine months* earl where, as I have suggested above, anatomy sho begin to ask less time and the institutes to increa (Please remember that I do not suggest that study of anatomy should cease here, it shou continue all along)

I am almost without interest in the structure of living organism except in so far as it is to be regar as influencing what that organism can *do.* What are concerned with in medicine and in every life is essentially the *function of the animal* a only at second-hand its constitution I beli that this has too often been overlooked with unf tunate results to the medical curriculum, a overlooked because of the separation of anato from physiology and *the budding-off of histolo* of biochemistry, and of pathology from one side or the other We tend to lack a unitary conception of pre clinical studies, and if we *could* bring back the *one* subject of the Institutes of Medicine again, I should be prepared to welcome anatomy within the portals I am not, of course, proposing to deny that the observation of structure during clinical study and during practice is useful, on the contrary, I look on the unaided senses of the trained observer as of the utmost importance and they are much more able to appreciate structural changes than functional ones But I wish to emphasise that the diagnostic and prognostic importance of such structural changes lies essentially in the indication which they provide as to probable alterations of function If you find a patient with bright blue sclerotics the true importance of this observation is not that he is peculiarly likely to break his bones but that he is thereby made likely to be unable to *do* things (I am I admit, conveniently overlooking the existence of pain)

Let me return, however, for a moment to the conception I mentioned earlier of a turning point in the orientation of medical education some months before the present position of the London second M B *I want to suggest that it is here or hereabouts that* we need the change over from a preponderantly static to a primarily dynamic conception of the living animal and of man in particular Up to this point the "language is being learnt" and then comes more thoroughly the turn of physiology which should shade off into pathology or, I should prefer to say shade *on* in this direction and later and still imperceptibly into the clinical subjects and associated ward work

I want to emphasise my firm belief that fundamental to a sound conception of the activities of the living body is a continual remembrance of (1) the animal as a whole, and (2) the everchanging being of that animal Of course these comments apply not only to physiology—the study of the normal organism—but perhaps with even greater force to pathology and clinical medicine Here again remember that pathology and medicine are essentially the same subject Certainly in the post mortem room and the morbid anatomy laboratory we are getting a "still picture," to borrow from the language of the cinema whereas in the wards the film is still going on With the still picture details can be studied and observed (and form a useful and instructive check on the accuracy of the necessarily superficial observations made during life) but it is only in life that the inter relationships of various functions can be seen or deduced

Remember too that a "disease" is *not* an entity, it is a process and the rate and even the detailed character of that process depend enormously on the living man in whose body that process is going on The dynamic conception of the "diseased life" is probably even more important than that of the normal one, since the variations which occur from time to time are more extensive and furthermore since in each case there is a breaking point at which the natural protective mechanisms of the body, possibly long heavily strained, are no longer able to react The consultant would in almost all cases be severely handicapped had he to rely solely on a single examination of the patient the past history of the [illegible] skilfully elicited enables him to construct for himself a sort of moving picture So too, in general practice it is the change in the patient's condition from visit to visit—a series of temporal cross sections—upon which diagnosis and more importantly prognosis is usually based

In conclusion I want to remind you that in the future we must look to scientific medicine for advance in the treatment of disease Centuries of empiricism have yielded many valuable remedies, but who can look back on the discoveries of the last 30 or 40 years and doubt where the path of progress lies But scientific medicine waits on our knowledge of the normal—of the details of the processes going on in our physiological make up and of its psychological comments Thus not only for the education of the medical student of to-day but also for the advance of knowledge and the further relief of suffering in the future we must look in great measure to the Institutes of Medicine

MEDICAL SCIENCE AND THE PATIENT

By Sir John Rose Bradford, Bt F R C P, F R S

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It is a mistaken and short-sighted view to take that medicine, as a science, is merely applied physiology, although it is profoundly true that the associations of physiology with medicine are very intimate The training you have received in the so called ancillary sciences, chemistry, physics, biology, and the knowledge you have acquired in the more closely related sciences of physiology and anatomy, must be regarded as preparations for the acquirement of a knowledge of the science of medicine for not even a profound knowledge of one or even of all of them can be regarded as a substitute for a knowledge of medicine as such This may seem to be so obvious as not to require refutation, but no lengthened experience of the practice of our profession will reveal, to all who have eyes to see or ears to hear, that nothing is more common than to transfer results obtained in one or other of these fields of work to the practice of our art without adequate consideration of the facts of the science of medicine as such

You will soon realise that the true place of the ancillary sciences and of anatomy and physiology is not merely to afford immediate practical and direct help in the recognition of individual diseases but rather to develop a scientific habit of mind and to form a true idea of the general nature of the activities of living matter, and perhaps most important of all to get to believe firmly the doctrine that like causes produce like results in the world of living matter as well as in the world of non living matter

Now this doctrine of like causes producing like results is of supreme importance in the study of such a science as medicine, where it is a commonplace to say that no two cases of any disease are really alike To a person of non scientific mind this well known statement of no two cases being really alike is apt to engender a peculiar habit of mind and of conduct—namely, that there is something peculiar about living matter and therefore of its diseases that so to say places it above laws To the scientific man the obvious fact that speaking roughly no two cases of a disease are alike notwithstanding that they seem to be does not invalidate the law that like causes produce like results it merely conveys to him the suggestion that although they seem to be alike they are not so in reality This is not a small matter, it is fundamental The one type of mind concludes that all is uncertain that there is no [illegible] and produces a hopelessness of outlook and [illegible] progress The other sees that there [illegible] and proceeds to investigate, and it that in a given instance that although the cases seemed similar they were not really, and discovers that the causes were different and that the law of like causes producing like results still obtains When I was a student I was taught that typhoid might last four weeks, and that occasionally it lasted only two weeks, thus it was not certain Many years later it was discovered that the two-week cases were paratyphoid and the four-week cases typhoid; that the two diseases although due to allied organisms were not identical but resembled one another in their clinical course, although the causative organisms responsible for them presented differences thanks to which they could be identified, and thus the causes of the two were really different; and so the law of like causes producing like results still obtained, and that it was not true that typhoid fever sometimes lasted four weeks and sometimes two weeks.

In dealing with such a complicated matter as a disease affecting an individual it is very essential that the mind of the practitioner should have as a basis a body of certain knowledge, and one of your main difficulties will often be to distinguish between what is known as certainty and what is merely founded on opinion or on mere dogmatic statement by authorities of very varying degrees of reliability This is the problem that confronted Harvey and I suppose it will always confront us It is here that the training you have received in the ancillary and preliminary sciences will be of the greatest value to you in training your intellectual processes to approach the question from the right point of view. In my opinion the rigid methods of thought inculcated by a good scientific training in the ancillary and preliminary scientific subjects of the medical curriculum afford an indispensable basis for the proper study of medicine as a branch of scientific knowledge, I hold that this is their main utility, and that their direct usefulness in the practice of medicine, great as it is, is really of secondary importance so far as the progress of the science of medicine is concerned In the practice of the art of medicine, however, it is otherwise. There the facts of anatomy and of physiology are of necessity of paramount importance in our daily work, and that brings us to the consideration of some points as to the art of medicine, which is a very different matter to the science.

The science of medicine deals with medicine as a whole, with the natural history of disease, its pathology, clinical course, &c; but the art deals primarily with the individual patients, and for its successful pursuit calls for qualities that may not be so necessary for the furtherance of the science. It may perhaps be said that the science of medicine has for its subject matter "cases," whereas the art of medicine has to deal with patients. Now patients are human beings with many or all of the aspirations and the failings that are inseparable from human nature Further, patients have anxious relatives also sometimes with failings One of the most fundamental lessons to be mastered as early as possible in the career of the practitioner is that nothing should be said or done to a patient by the practitioner that would be resented by the practitioner if it were done or said to him if the positions were reversed and he were the patient and not the doctor. No doubt it is rare, probably very rare, for acts to be done which would be open to this criticism, but due consideration is by no means always given to what is *said*, and much needless mental suffering is caused by incautious statements to patients or their relatives about their ailments. Statements often merely thoughtless, but sometime not to be justified Thus nothing is more commo than for the doctor to be equally dogmatic in h statements on facts which are definitely known to b established, and on other so-called facts that ar merely matters of opinion and far from being estab lished with certainty This is a fertile cause of mistake and is also responsible for much of the advers criticism of our profession by the more intelligen layman who does not fail to observe that man dogmatic utterances are found in no long time to b quite erroneous Then he is prone to believe that th is possibly true of all medical ex-cathedra utterance You are justified in speaking with confidence o what is certainly known, but you must never forge that much of what the public really desire to lear from us is not known with the certainty that justifie dogmatic statements.

The progress of our art has been such that we ca now with confidence of accuracy label a great an ever-increasing number of diseases, and to say th is a matter not only of pride and satisfaction, but w recognise that it is essential and fundamental to furth progress The patient and his relatives are not reall interested in this, as is quite natural To the the one essential is to know whether he will recover o not Now you can be as dogmatic as you like a regards the label or diagnosis if the facts justify yo but you must realise that diagnosis and prognos are very different things and based on quite differen facts The one is on a more secure basis than th other, and *it is very often most unwise and qui* unjustifiable to speak with equal certainty as to thes two different things Further you will be judge not by your diagnostic but by your prognostic utte ances, and if the latter are falsified, as happens to a of us (both in diagnosis and prognosis), medicin itself, suffers in the judgment of the laity and ofte quite unfairly. This cautiousness in speech does no mean that you should say nothing, still less that th matter should be obscured by a cloud of word especially of professional jargon; but the actu position should be put in as few words of the simple language possible. Further, never forget that n patient and no anxious relative is really quite norm when face to face with the doctor, especially when h is summing up and pronouncing judgment, and tha this applies to all patients, even those who eithe regard themselves or are regarded by others certainly above the average intelligence.

You will hear in the course of your career man astounding stories of what other doctors are said have said, and in not a few instances you will hear sc really amazing statements that you yourself are to have made; and occasionally you will be told the patient himself that on such and such a you said so and so, when you know that you said any such thing either to this patient or to patient in your whole life. If you realise that patien and relatives are apt to be very nervous when any verdict, that will emphasise the urgent neces of speaking as little as possible and as simply a possible It is also advisable not to accept as accura the astounding statements that you are informe have been made by your fellow practitioners following this rule you will at least avoid mu annoyance, and possibly you may be induced to ta a more hopeful and charitable view of your fel creatures than you would if you accepted such sto as credible. Although in some respects patien are often in an abnormal mental state when confront with the doctor, on the other hand the realities illness strip from us many of the trappings and artificialities of life, and you have the great advantage where proper understandings are established between the patient and the doctor and there is mutual regard of doing your work under the conditions most *favourable for its success*

To be a good doctor many qualities are required besides the professional and technical knowledge that it is the duty of the medical school to teach In the hospital the daily contact with the sick will teach you some, but it is not until you are actively engaged in practice that you will learn others They all centre on the fact that patients are human beings and will show a most extraordinary response to any kindness and consideration shown them when they *are prostrate with pain and suffering* Never forgetting that perhaps the worst suffering is mental and not physical, and that much misery may be caused by a careless word as well as by carelessness and roughness in physical examination

POST-GRADUATE LECTURES

SEVERAL of the London teaching hospitals have been holding short post graduate courses during the past fortnight As in previous years, we propose to publish abstracts of some of the lectures delivered Of the three which are summarised below Dr Whitby's and Dr Young's were given at the Middlesex, and Dr Hamilton's at Charing Cross Hospital

THE MODERN TREATMENT OF STAPHYLOCOCCAL AND PNEUMOCOCCAL INFECTIONS

(DR L F H WHITBY)

I WILL deal first with superficial localised infections such as boils and carbuncles, neglecting deep seated surgical conditions such as perinephric abscess and osteomyelitis

The cure and prevention of boils is a very uncertain undertaking Most men in practice have at one time or another used one and more of numerous remedies and, in the end, have despairingly handed the patient over to a rival practitioner In other cases the first or second remedy may appear to have worked miraculously The remedies *in common use* may be classified as:—

(1) *Specific*—Vaccines, autogenous or stock which are a rational form of therapy These may be given by subcutaneous injection or sometimes by the mouth

(2) *Non specific*—The injection of manganese tin S U P, or whole blood This form of treatment depends for success upon shock

(3) *Adjuvant*—Yeast, iron tonics general stimulants and the control of ancillary conditions such as diabetes

I have used most of these remedies and believe that some of them may be partially effective In the case of vaccines considerable experience is necessary to get the best results Autogenous vaccines are undoubtedly superior to stock *preparations and* there is no doubt that the optimum dosage varies with the patient Should no effect be obtained with some six doses, it is rare for there to be any benefit by using more The weak point of vaccine therapy and protein *shock* methods is the absence of any control other than the clinical observation of cure or relapse No one can say of a person in whom a boil has disappeared that he is probably safe from a recurrence Any method of immunisation which permits a control in the form of an accurate titration of immunity would therefore be *a distinct advance*

The staphylococcus has been shown to produce at least three types of toxin, the first of these is actively hæmolytic the second has a necrotising action on the skin, and the third produces rapid death in experimental animals The hæmolytic toxin can be easily demonstrated and titrated in the laboratory whilst its antibody, the antihæmolysin, can be estimated in any sample of blood serum. *The dermo necrotising toxin, the one probably concerned* in skin lesions, is more difficult to demonstrate as an individual procedure, but its antibody seems to be produced in parallel with the antihæmolysin A titration of antihæmolysin in a patient's blood-serum supplies useful information as to immunity before and after treatment, and it allows us also to form some idea of the *probability of relapses, the suitability of* dosage, and the amount of material which should be injected The discovery of staphylococcal toxin provided an antigen for the preparation of a potent and active antitoxic serum Furthermore, because the toxin can be converted into toxoid, there is also an antigen which can be used with safety for the active immunisation of human beings *These discoveries* have opened up a field comparable to that now covered by the various immunisation methods for diphtheria

Staphylococcal toxoid is not yet available for general use The safety and value of the substance is first being investigated by the Therapeutic Trials Committee of the Medical Research Council, using standard preparations produced mainly by Messrs Burroughs Wellcome * In my own experience it has given more consistent results in a series of over 100 localised staphylococcal infections than any other antigen I have previously used No case has failed to show a rise in antihæmolytic *titre of the* blood, relatively few have failed to respond to treatment, and anything more serious than a slight local reaction has been extremely rare The treatment has usually occupied about four weeks whilst the number *of injections and the volume injected are both small* The response to treatment, as measured by antihæmolytic titre, is variable *from subject to subject* Some have a high titre at the outset and this is especially so with deep-seated lesions Some respond to small doses, others require continuous treatment I have found that the best rule is *to aim at* raising the titre to at least *ten times its original level* rather than to name a fixed level above which any given patient may be said to be immunised I am quite sure that staphylococcal toxoid *after* proper trial will find a prominent place *in* the future treatment of localised staphylococcal *infections*

It is natural to *inquire* whether other antigens, vaccines, and *non-specific substances also* raise the antihæmolytic titre of the blood This point has been but little investigated and my own experience is confined to a very small series A few have shown minor *rises in antihæmolytic* titre with autogenous vaccine but most have not When there has been a rise it seems probable that the vaccine contained traces of toxin or toxoid which in a sensitive person is rapidly effective.

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* Publications on its value have been made by [illegible] O'Meara and Clark by H J Parish at the British Medical Association this year by C. L. Dolman in America, and H [illegible] in Germany (See THE LANCET, 1934 ii, [illegible] 1934, p 361, Sept 1st p 502)

For staphylococcal septicæmia and for acute localised infections with severe toxæmia the obvious specific treatment is the administration of antitoxic serum I have found this serum at least as potent as its streptococcal equivalent. It is worth using in large doses in septicæmia, osteomyelitis, and especially in severe staphylococcal intoxication, such as may occur from an infected burn of the skin I usually combine intensive serum therapy with a small blood transfusion, believing that the fresh human complement supplied by the transfusion assists the action of the serum I would *emphasise that if serum treatment* is undertaken there should be no hesitation about using large doses. If one is afraid of serum reactions —and there is no need to be afraid if an adrenaline *syringe is kept handy—it is well to remember that the* shock produced by 10 c cm. of serum is as great as that produced by 100 c cm

The modern treatment of *pneumococcal infections* includes the use of Felton's serum. This serum is a concentrated product standardised in mouse-protective units, and an amount of 20 c cm is suitable for an initial dose when serum therapy is contemplated. The serum is injected *intravenously* and as the onset of shock may be rapid an adrenaline syringe should be ready. The serum is effective only against infections with the type I or type II. coccus and there is no justification for using it empirically in the absence of a knowledge of type; in the first place it is expensive and in the second place it may cause extreme distress to a patient without any chance of benefit. Correct typing is an essential preliminary, and I would emphasise that direct typing from the sputum is difficult and requires much experience Publications describing direct typing have given a very false idea of the ease with which it can be performed. When direct typing fails mouse inoculation has to be performed, but this necessitates a delay of only a few hours Typing is best done by an expert, preferably on a sample sent by hand or by train, for the fresher the specimen the more easily is direct typing performed.

I do not advocate the use of Felton's serum as a routine in type I. infections, but it is very valuable in selected cases Type I pneumonia affects mostly relatively young persons in whom, a priori, the prognosis is fairly good Treatment of any case of type I infection with serum almost always accelerates the crisis, relieves immediate distress, and hastens recovery, but one has to remember that delayed serum sickness in the form of joint pains, fever, urticaria, and swollen glands may be a distressing sequel. Many authorities say that serum is ineffective unless given in the first two or three days of the disease. It is true that the most dramatic effects are obtained during this period, but I am quite convinced that there may be benefit as late as the seventh day. With late administration there may be no dramatic crisis but the patient becomes less toxic and less distressed. I am in favour of giving serum in type I infections at the earliest possible moment when they are old subjects, when they have a complicating factor such as high blood pressure, when there is a previous bad history of chest disease, when the general condition is poor, or when it is obvious that every possible remedy must be exploited in order to save the life of the patient. In a relatively young fit person who appears to have every chance of weathering his own storm I should not use serum. Type II. infections are far more toxic and fatal than type I. Serum is indicated in every case of type II *infection and the earlier it is given the better* Serum therapy appears to have no action in preventing the onset of complications such as empyema.

Prognostic information in lobar pneumonia is supplied by the blood culture and leucocyte count A positive blood culture during the first two or three days is to be expected, and should not be regarded as of grave significance, but a positive culture persisting *after the third day is usually serious* In the initial stages the most favourable leucocyte counts are between 20,000 and 30,000 per c.mm. Counts below 15,000 or excessively high ones, 50,000 or more, have a *serious significance. The initial leucocytosis* should persist until the crisis, but should drop to the region of 10,000 per c mm 24 hours after the crisis has occurred. A fall in leucocyte count during the acute phase is an *indication for serum therapy* The leucocyte count is of value for the early diagnosis of empyema, but it should be borne in mind that delayed serum sickness is accompanied by fever and leucocytosis, and has therefore sometimes been mistaken for an empyema I have been unable to obtain any prognostic information from the determination of the agglutinin content of the blood.

No *serum therapy is available for the treatment* of type III. and group IV. infections Some benefit seems to follow the use of small daily doses of vaccine in the early stages. Type III infections are always serious Group IV. infections are most common in old people and are by no means as mild as is commonly supposed; the mortality indeed is almost as high as in any other type, with the exception of type III It is as well therefore not to assume that all group IV. cocci are harmless mouth commensals.

NEW DRUGS AND OLD REMEDIES

(DR. R. A YOUNG)

FASHION plays no small part in human affairs, including even so serious a matter as the treatment of disease This often results unfortunately in the trial of ephemeral preparations and the discard of valuable agents. Years ago I was much intrigued by a title of a paper by an old physician—*Good Remedies out of Fashion*—and by the *cynical* comment of another on the flood of new remedies— "Make haste to use them while they do any good." There are a few old and tried remedies which have stood the test of *many generations*, and these are firmly established in our schemes of treatment— notably mercury, the iodides, the alkalis, opium, digitalis, and the cinchona derivatives.

The researches of biochemists, pharmacologists, bacteriologists, and manufacturing druggists, and the investigation of the agents they discover by physician and practitioners, have undoubtedly served from time to time to give us useful and effective additions to our means of treatment. In adopting new remedies we should always carefully consider their source and weigh the evidence in support of their value before employing them. While we must admit that in the past empiricism has yielded valuable results, in the present times the mechanism of drug-testing is more evolved and the rationale of their action more easy to determine scientifically. This morning I propose to draw your attention to a few comparatively new drugs and remedies which I believe to be useful.

Salyrgan—In this drug there can be little doubt that we have a valuable addition to our means of treatment of dropsy. That mercurial prepara can act on the kidney and lead to diuresis is familiar from its age long use in Guy's or Baillie's pill Three new organic preparations of mercury—Novasurol, Salyrgan, and Neptal—merit mention Salyrgan has proved to be practically non toxic and is therefore now generally employed It contains 36 per cent Hg It is used in sterile 10 per cent solution and is best given intravenously Care must be taken that none escapes into the tissues, since it is very irritant The initial dose is 1 c cm, and this can be repeated at intervals of two or three days and may be increased to 2 c cm It should be diluted to 10 c cm with sterile saline or water and injected very slowly Its efficiency seems to be promoted by giving ammonium chloride grs 15–20 three times a day in water flavoured with liquorice or other demulcent The amount of fluid given to the patient should as a rule be restricted to 20 or 30 oz in 24 hours and should not exceed 35 oz The resulting diuresis is usually rapid in development and profuse in quantity—frequently 100 oz or more in 24 hours—and in successful cases patients may lose a stone or more in weight in a week It is useful in cases of severe congestive heart failure with dropsy, in cases of chronic failure with nutmeg liver in some cases of pericardial effusion, and of visceral engorgement in association with pericardial adhesion It is worth trying, though often less effective in cases of renal disease with dropsy It is less successful in cases of nephrosis It can be helpful in cases of cirrhosis with ascites I have also found it of use in Concato's disease multiple polyorrhomenitis There are certain contra indications to its use, notably hæmaturia acute nephritis, very advanced renal damage severe hepatic degeneration, colitis or severe diarrhœa, and in conditions of thrombosis, since it sometimes seems to favour intramuscular clotting

Coramine—An effective stimulant or analeptic for emergency use and for assistance in maintaining the circulation in conditions of stress in acute infection is constantly needed Ether is fleeting in its action, camphor is discredited by the pharmacologists although some of us still believe in its use in emergency Coramine seems to be a valuable drug in this connexion I have used it extensively and am convinced of its value on clinical grounds in conditions of circulatory failure in pneumonia with fall of blood pressure, in cases of shock, and in some cases of coma It is strongly recommended in the condition of coma resulting from overdosage of the barbitone group of drugs and the basal anæsthetics of the Avertin type Prof F C Dodds informs me that it is common to find it restore the pulse in the deeply collapsed form of diabetic coma I have usually given it intravenously in doses of 1 c cm two to four times in 24 hours, but in emergency it can be given intravenously in doses of 2–3 c cm injected slowly

Sedormid—The treatment of sleeplessness is so common a subject for discussion and one which has been so recently ventilated more especially in regard to the use of the barbiturates that I hesitate to refer to it I am, however, so convinced of the necessity for the occasional and even routine use of a sedative and often of a soporific in cases of habitual insomnia that I venture to mention one I have found useful Sedormid is allyl isopropyl acetyl carbamide and is put up in tablet form It is recommended to be given in doses of one or two tablets at bedtime I have often found half a tablet effective in securing restful sleep where there is no pain In treating obstinate insomnia and the sleeplessness of acute febrile disease, it is sometimes best to use a mixture of hypnotics and sedatives, or to give them in sequence Sedormid is useful in conjunction with such drugs as codeine or medinal, and also in achieving further sleep when patients wake early after a hypnotic dose or a mixture of hypnotics

Gold Salts—These have been extensively employed during the last ten years Sanocrysin, Allochrysine and Myochrysin are the forms chiefly used for intravenous injection, while allochrysine, Solganol B-oleosum, oily myochrysin, and oleo-sanocrysin are given intramuscularly Smaller doses are now used than formerly—0 01 g being the usual initial dose, with gradual increases up to a maximum of 0 5 g Injections are given every five to seven days and the total amount given in a course should rarely exceed 5 g Gold salts are used in the treatment of tuberculosis, both pulmonary and cutaneous, asthma, and chronic arthritis In pulmonary tuberculosis it is chiefly recommended for active lesions of exudative type, especially those occurring in the contralateral lung during collapse treatment by artificial pneumothorax or after thoracoplasty It seems sometimes to assist in getting rid of bacilli in arrested cases left with a small amount of sputum Gold should certainly not be used without strict care, since it can produce severe toxic symptoms, such as fever, malaise, increased cough, and sweating from its effects on the tuberculous foci, and also stomatitis, severe skin rashes, albuminuria, nephritis, and jaundice from its effects as a metallic poison Sun exposure during and after treatment should also be avoided owing to the purplish discoloration of the skin which may result In asthma, special care is necessary I have seen severe toxic symptoms result from very small doses

Old Remedies—Fashion in medicine and the desire to try new remedies have often led to the neglect of valuable means of treatment Aconite in small doses in fever was extolled by no less an authority than Sydney Ringer some 40 years ago, and though it has been displaced by the coal tar group as an antipyretic it can be a useful drug Antimony, once so much employed as a depressant expectorant in the early dry painful stage of tracheitis and bronchitis, has again come to the front in the treatment of conditions such as bilharziasis I have found very small doses of copper, such as gr ¼ of copper sulphate in half a pint of water, twice daily, of great value in some intractable forms of anæmia, in conjunction with iron salts, when they alone failed and it is now suggested that copper has some catalytic action in regard to iron in treatment Bleeding has come into its own again, but dry cupping, leeching and the packs are more or less neglected The application of cold or hot compresses to the neck in painful sore-throat was a routine method in days past and can certainly give great relief

By all means let us adopt new methods when they prove more helpful than the old, but let us not assume that every vaunted novelty is an advance

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VOMITING IN INFANCY

(Dr C K J HAMILTON)

VOMITING may or may not be important it is very common in babies It is essential to ascertain whether or not there is also diarrhœa and the child should be examined for conditions outside the gastro-intestinal tract such as pyelitis The nature of the vomiting should be noticed projectile or through the nose, presence of blood, bile curds, etc [illegible] Blood may be swallowed from a cracked [illegible] may be due to ulceration Bile suggests no pyloric obstruction Among the causes of vomiting are pyelitis, middle-ear disease, pneumonia, or any acute illness, infections of the gastro-intestinal tract, organic obstructions, and functional disorder.

Some children are born with complete atresia of the œsophagus and everything taken is returned unaltered, with a good deal of mucus There is no treatment save to ensure a pleasant death Children occasionally get cardiospasm and present symptoms after a few months of life; the returned milk is alkaline and unaltered. The diet should be non-irritating and bougie dilatation may be used in older children Pyloric stenosis as a rule causes vomiting 7 to 14 days after birth, and the vomit may be thrown a considerable distance, often through the nose. The child may not vomit very frequently but each vomit may be larger than the last feed and may leave the child quite collapsed As a rule it contains neither bile nor blood, but both may occasionally be found. Constipation necessarily follows any form of fairly severe vomiting, but a pseudo-diarrhœa often occurs These children have five or six dark green stools daily, composed almost entirely of mucus. This may lead to a wrong diagnosis of diarrhœa and vomiting The child loses weight and looks thin and ill Diagnosis is verified by visible peristalsis and palpable tumour. No case should be operated on until the tumour has been felt; it is unmistakable. The child must lie comfortably with bare abdomen and must be examined just after a feed.

Most people are agreed that surgical treatment is correct in the vast majority of cases Medical measures are only justified in mild and recovering cases which have been missed; they consist of daily gastric lavage, small doses of luminal (gr 1/16) or atropine, and a fairly concentrated diet The operation should not be done as an emergency, but 24–48 hours should be spent in getting the child fit by gastric lavage, a change of diet, and treating the alkalosis (which is probably present) by means of subcutaneous normal saline Pylorospasm appears in rather older children and is not accompanied by much wasting or palpable tumour The child is often nervous and irritable The treatment is medical Duodenal obstruction in the new-born infant varies from complete atresia to partial block The vomiting is projectile and bile-stained and the visible peristalsis very marked The final diagnosis is established by an opaque meal The correct treatment is operation, though the results are poor.

Vomiting may be due to too large or too frequent feeds A baby should not have more than 2½ or at most 3 oz of food per lb of body-weight The interval should be at least three hours. Possetting is common in breast-fed babies and obviates over-feeding. It does, however, merge into pathological conditions In dyspepsia something has gone wrong with the chemistry and the stools are never normal; they may be fermented as a result of too much sugar and too little protein, or fatty—associated with either diarrhœa or constipation—and frequent, sour, curdy vomiting Vomiting may also be caused by large protein curds The first thing in the treatment of dyspepsia is to cut down fat and then gradually work up to the normal amount The fineness of the protein curd must be ensured Air swallowing is a very important cause of vomiting. A breast-fed baby may swallow air by feeding too quickly or too slowly, or by sucking hungrily at an empty breast Nasal obstruction is a very common cause, any form of dyspnœa may cause vomiting The wrong teat may produce it; the teat should be bulbous and should be gently pulled against the child's lip during the feed to prevent air entering If the child is fed in a sloping position instead of flat, o allowed to "bring up the wind" in the middle of the feed it will not lose milk with the returning air The nose can be cleared with an ephedrine sp before feeds Too rapid feeding can be controlled by giving water before the feed or controlling the flow. Many children swallow air when sucking their fingers An upset and nervous child swallows air, and extraordinarily good results may be obtained from half a grain of chloral given about 20 minutes before each feed.

Habit vomiting appears at about two or three months in an apparently healthy bottle-fed child. The child vomits small amounts at any time Th feeds must be concentrated and small L and drugs give no result. Tube-feeding for 24 hour sometimes breaks the habit. Rumination does no appear before four months and usually starts from some small gastric upset. The child definitely enjoys the process, but rarely does it under observa tion, it must be watched from behind a screen The condition may be serious, producing Plugging the nostrils with cotton-wool and tying chin up have been recommended. Laying the on its face often works and carrying it abou incessantly for an hour and distracting it is infallible, but very exhausting The best met is to put it on solid food as soon as possible. D are not very effective.

MEDICINE AND THE LAW

Atophan (Cincophen) Poisoning

AT an inquest on Sept 27th on a man who from "acute yellow atrophy" of the liver taking Atophan for rheumatism, the Birmin city coroner (Dr. W H. Davison) declared that drug ought to be at once placed on Part I of Schedule of Poisons. He expressed a hope that inquest would warn the public and induce members the medical profession to look upon it in a different

The practitioner in charge of the case said the patient came to him in March complaining sciatica and he prescribed 20 tablets of atophan, to be taken three times a day after food. Three d later, as the patient lived some distance away, he a second prescription. He thought atophan was safe drug to prescribe in that quantity, people obtain it in the ordinary way from the chemist they wished to.

The Coroner Do you agree they should have of it?—A I have never had any ill-effects from it I have prescribed it quite a lot

Q Do you look upon it as a perfectly safe drug to prescribed without any special limitations?—A I a have done up to date

Q Did you not look upon it as dangerous?—A I not I had two cases where patients developed a That is all the ill-effects I have known.

Q Have you used it in thirty or forty cases?—A yes, more than that Two years ago my own wife course of 100 tablets continuously without any ill whatsoever

He added that he would not order more than a day, and he did not consider the quantity he ordered any way dangerous He had had no experience of danger to anyone with a liver or kidney condition

A third supply was ordered on April 10th, and the patient went back to work When seen in vas in better health and was reasonably fit On 22nd he was injured at work and after the burns received had cleared up he developed jaundice ch the practitioner thought was ordinary catarrhal ndice On being called to see the man on June 11th n he was vomiting he found that the jaundice more marked, and suggested that investigation uld be made in hospital He did not tell the pital doctor that he had been treating the man atophan because he did not connect that with condition

he Coroner It appears to me that you were not re that atophan under certain circumstances might up the jaundice ?—A Until the 15th of this month as not

Were you aware at all that atophan was a drug ch in certain circumstances causes unpleasant symp s ?—A Yes

But not a symptom that might kill ?—A No

You did not look upon it as a dangerous drug ?—No, only a drug which did not agree with everyone

practitioner said that the man went to work sequently after a holiday and then he saw him in at the beginning of September, when he was y much changed He sent him to hospital

temporary medical officer at Selly Oak, giving dence, said he suspected atophan poisoning l asked the wife for the phial of tablets he had n taking, but only got it after the man's death

William Whitelaw, chief pathologist of the mingham municipal hospitals, who carried out a st mortem examination, said the cause of death s acute yellow atrophy of the liver It was a pical case of atrophy caused by atophan Dr K D lkinson, professor of pharmacology at the Univer y of Birmingham, said he had used atophan in his n practice fairly frequently with considerable ation It was known by various trade names and agreed that it was a pity such a drug should have many names It was used chiefly for gout and he d found it to act as a charm in certain conditions produced very considerable improvement in certain es, and that sort of thing was very likely to impress tients so much that they would fly to it at every portunity and were likely to recommend it to eir friends He knew it could be obtained at the emist's by anyone though it was being considered the Schedule His habit was only to prescribe it use it where other remedies had not proved icacious He prescribed three tablets a day on ternate days—that was three days in each week d three weeks in all—and he would not repeat at for a year He regarded it as a very definitely ngerous toxic drug and 27 tablets, which was st over grs 200 altogether, was the maximum dose ich he would give in any year Much smaller ses had proved efficacious Twelve tablets were orted to have caused a death But as they had ard, much larger doses could be given without obvious damage There were about 50 recorded aths from the drug He agreed it might have killed good many before its effects were known From 08 to 1923 there was no recorded instance of soning by atophan, and it was used fairly exten ely in Germany and later in France and England had seen three fatal cases himself It was a drug ich could do damage dangerous damage before dangerous symptoms were recognised It might as long as two months after the last dose was taken ore those symptoms appeared The deceased had t something over grs 300 That was beyond what would have ordered, but it was not beyond what quite commonly taken—and taken with impunity He thought the drug should be scheduled as a poison It was his own practice not to issue a prescription but to hand over the drug When the drug was being used he thought the patient had to be kept quiet, had to be rather carefully fed, and should have fluids generously In his opinion atophan was a drug which should be reserved largely for patients who could be kept watched while they were taking it He thought there would be damage to a perfectly healthy liver if enough was taken, but an unhealthy liver would be more readily damaged His recommendation was that the drug should be labelled poison and only taken under a doctor's direction He considered the makers were doing what was reasonable in giving the warning they gave on the label

Dr Horst Neumann, medical director to Messrs Schering, the manufacturers said the drug had been used for the treatment of rheumatism and gout for twenty-six years During that period they had records of 30 to 40 deaths They recommended that it should be used with caution, and when a layman wrote about it they always referred him to his own medical adviser During the last eight years 68,000 000 tablets of atophan were issued from their works

The coroner said that this was the second death within a short period that he had had to deal with in which the effects of atophan had been brought into question Undoubtedly it had a very powerful effect on the liver, but there was some doubt as to whether it acted on a healthy liver or only on a diseased liver There were no initial symptoms which would warn a patient that he should discontinue its use, and in some cases damage would be done before anything was known about the effects of the drug When one realised that the medical practitioner who was prescribing the drug did not expect it to act in the way it did, one could not expect the general public to know anything about it, and he thought a warning should be issued that the drug ought not to be used under any circumstances by any person except under the strict supervision and control of a medical man At present anyone could walk up to a chemist's counter and buy as much as he liked It was true that the manufacturers had wrapped instructions round the phial that it should be taken with care, but one knew how lightly those things were regarded, and it did not seem to him that that was sufficient to draw the attention of the public to the dangers attending the taking of the drug—He recorded a verdict of death from misadventure

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X RAY TREATMENT FOR CANCER—Recently Sir Charles Hyde chairman of the governors of Birmingham General Hospital, formally accepted a high voltage X ray apparatus and a new department to house it, both the gifts of Sir Herbert Austin The total cost has been £[illegible] Sir Herbert said that although the apparatus was primarily designed for certain forms of cancer, it had a wide field of useful service in other sections of medicine and surgery Dr J F Bromley is in charge of the department

CONGESTED HOSPITALS—One night recently there were 173 patients at the King George Hospital Ilford This was the largest number it has ever contained and 31 more than its normal maximum The hospital is constantly congested, beds have had to be put down the centres of the wards and it is necessary to refuse all but the most urgent cases During the last two years there has never been a night with a vacant bed—Scunthorpe War Memorial Hospital, Lincolnshire is another overcrowded institution It was originally designed for 72 beds; subsequently ward space was arranged to take 86 but sometimes [illegible] patients have to be looked after There is a waiting-list of [illegible], and it is hoped shortly to provide two new wards containing [illegible] beds

CORRESPONDENCE

AN APPEAL TO MEDICAL BENEVOLENCE

To the Editor of THE LANCET

SIR,—It has been my privilege for many years to appeal to your readers for contributions to enable the Royal Medical Benevolent Fund to distribute Christmas gifts I desire to express my personal gratitude to my many medical colleagues who have so generously responded to the appeal in recent years, and especially to the medical societies and panel committees who, together with branches and divisions of the British Medical Association, have arranged collections at their meetings in aid of this particular need

In a short letter it is impossible to give any details of the sorrowful lives of those we endeavour to help; in a great many cases tragedy has befallen them I write on behalf of over 650 beneficiaries, for that is the number on our books, and I feel therefore a great personal responsibility as to whether my appeal will suffice to persuade your readers of the urgent need of a generous response One medical practitioner, a married man, wrote recently to the Fund that at the age of 66 he had suffered a complete breakdown in health and further work was out of the question He had done all that was possible to keep going, and was still not in debt as he had drawn on his endowment policies But he had now come to the end of his resources and had been forced to take his little girl, aged 14, away from school as he could not meet the next term's fees, his income being £60 a year

The Fund is now helping this colleague with a yearly maintenance grant, but we want at Christmas to give him and many others the unlooked for Christmas gift We try to distribute 30*s* to each I ask your readers to help us to do so Donations will be gratefully acknowledged by the hon treasurer, Royal Medical Benevolent Fund, 11, Chandos-street, London, W. 1 —I am, Sir, yours faithfully,

THOS BARLOW,
President of the Royal Medical Benevolent Fund
Sept 24th

ERYTHEMA NODOSUM

To the Editor of THE LANCET

SIR,—A study of the literature of erythema nodosum brings out two striking points connected with the age of the patients · first, that in childhood the sexes are about equally affected, whereas among adults, females form the great majority of the cases, secondly, that in childhood the ætiological factor is most often tuberculosis, whereas rheumatism is the causative factor in the vast majority of adults. Where contagion has been proved, it has usually been in children, and has been shown to be tuberculous. Recurrences have been noted in both children and adults, which fact is probably in favour of the rheumatic theory of its ætiology

Dr J O Symes has referred (THE LANCET, 1929, ii, 1033) to four sisters who each had erythema nodosum over a period of 26 years, usually accompanied by tonsillitis, their parents were both rheumatic, and the mother had also suffered from erythema nodosum Another of his cases had seven attacks between the ages of 18 and 37. These facts support the theory of rehumatic ætiology in adults Dr. A. Hope Gosse, who has analysed (*Practitioner*, 1913, xci., 240) 100 cases among children, rejected both the rheumatic and the tuberculous theory Yet his figures show that 48 per cent. of his cases had one or more of the symptoms arthritis, tonsillitis, or chorea, and only 19 per cent. failed to show one o more of his accepted manifestations of rheumatism

In my own study of 35 cases in adults, 33 were females The youngest patient was 19, and the oldest 69. The third and fourth decades each accounted for 11 cases, the fifth for 8, and the sixth and seventh for 4 None of the cases gave a previous history of tuberculosis There was a previous history of rheumatism in 13 cases, and of tonsillit in 13 cases; six of these overlapped Included in these 20 are one case who had suffered from chorea, and 2 who had previously had erythema nodosum, one of them twice Concurrent with the eryth nodosum there were 25 instances of arthritis 20 of tonsillitis; 15 of these overlapped, g 30 cases out of 35 who showed one or both sympto at the time of the erythema nodosum. Seven of th 30 had endocarditis

These data support the theory that in adul erythema nodosum is usually a manifestation acute rheumatism.—I am, Sir, yours faithfully,

Manchester, Oct 1st A. HILLYARD HOLMES

To the Editor of THE LANCET

SIR,—Hebra's remarks on the treatment of erythe nodosum were to the effect that a drop of tinctu of arnica in a bucket of water would not do an harm. It is most likely that this is the correct attitud towards the treatment of a symptom, which, a Dr Collis points out, is self-limited in d Nobody who has studied the symptom called erythe nodosum would deny that as a symptom it occurs response to various toxins In England this specificity of erythema nodosum has blinded our to the fact that out of all these various toxins tu culosis stands first in frequency and imp When this fact is fully and generally realised mu ill-health will be prevented, and I am in en sympathy with Dr. Collis when he states that he wo willingly give up mentioning streptococcal ery nodosum if thereby he could persuade people to reg every case as potentially tuberculous. It is great trepidation that I am shortly publishing cases of aphthous stomatitis associated with erythema nodosum—and not due to tuberculosis

I am, Sir, yours faithfully,

Guy's Hospital, S E, Sept 28th G P. B. W

THE CANCER PROBLEM OF TO-DAY

To the Editor of THE LANCET

SIR,—In an annotation under the above hea in your last issue you say in effect that the belief cancer is a disease of civilisation is a facile and su ficial generalisation founded on wrong premises, outcome of modern hurry and has been disp over and over again. As a matter of fact the opin referred to has been held for over a hundred was mentioned with approval by Walshe in and was afterwards accepted by some of our grea oncologists In these circumstances the t "hurry," "slogan," "facile" seem peculiarly inap priate.

Then so far from this generalisation having disproved the evidence in its favour has so gr in the course of years that it is to-day no long mere opinion but a widely recognised fact confirmation of the truth of this statement is no need to seek outside our own country or present century. It is not likely that anyone dispute the assertion that during these last 33 there has been a decided improvement in the cleanliness and sanitation of the people, compared with their state during the previous century That such is the case is proved by the striking reduction in the diseases of insanitation and, above all, by the saving of the lives of infants and the prolongation of lives at all ages So notable is the improvement that, as Sir George Newman has shown, the proportion of the middle aged and aged has increased during this period by over 50 per cent Yet we all know that cancer as a cause of death is uncommon in the young, common in the middle aged, and still more common in the old In brief, the same civilisation which has lengthened the life of the individual has thereby increased his liability to die of cancer

Again an inevitable feature of our advancing civilisation is its increasing complexity as shown in the increasing use of appliances, many of which are capable of causing cancer The use of the Kangri basket, the Betel quid, tobacco, alcohol, coal tar are all evidences of an advance from the state of simplicity of the primitive savage and all are carcinogenic In our own country and century X rays, radium, tar products as well as those insidious poisons which are poured out in localised sepsis and are now becoming so prevalent are also traceable to the complexities of our civilisation, and all are carcinogenic And these, as we all know, are no more than prominent examples of a host of mechanical chemical actinic agents capable of causing that form of irritation which starts a cancer into being

Hence the evidence that both the liability to cancer and the activating causes of cancer increase as our particular brand of civilisation increases is simply overwhelming It would appear that the cancer researcher, failing to make progress in his particular line of work, has turned his attention to well established and generally accepted truths of oncology For these large generalisations the detailed and exact methods of the researcher, his minute examinations and repetitions, seem eminently unsuitable Such regurgitation may do no particular harm so long as they are kept within reasonable limits but when he brings up that which has already been thoroughly digested and then only to spit it out, the process is hardly calculated to advance the cause of cancer or the interests of the body politic

I am, Sir, yours faithfully,
HASTINGS GILFORD

Reading Oct 1st.

*** We should all admit that the same civilisation which has lengthened the life of the individual has *thereby* increased his liability to die of cancer But the statement that cancer is a disease of civilisation is generally taken to mean that there is something in civilisation which increases the liability to cancer irrespective of the prolongation of life And of this we lack evidence —I D L

VITAMIN A AND PELLAGRA

To the Editor of THE LANCET

SIR,—In your leading article of last week entitled Vitamin A and the Skin no mention is made of pellagra It may be of interest therefore to recall the fact that the characteristic lesions of the skin, now considered to be a manifestation of a vitamin A deficiency, were first described in 1911[1] (by myself) in association with pellagra in natives of Central Africa Attention was also drawn at that time to the occurrence in these cases of those other lesions since noted by recent observers—the irregular erosions of the tongue the excoriations at the angles of the lips, together with a similar condition at the angles of the palpebral fissures, the free border of the prepuce, about the anus and vulva Recent authors quoted in your leading article have also noticed an association of the skin lesions with symptoms of peripheral neuritis, dimness of vision, night-blindness, mental and physical apathy, diarrhœa, &c —all symptoms common to pellagra In fact many of the cases of the so-called vitamin A deficiency syndrome present the picture of pellagra without the pellagrous eruption

This is of interest in view of the fact that Mellanby[2] believes pellagra to be due essentially to a vitamin-A deficiency He thinks that the nervous lesions found in his experimental animals fed on a vitamin A deficient diet are comparable to those in pellagra, and further holds that the pellagrous eruption is due to the same deficiency, he says "the pellagrous skin lesions are clearly due to loss of a neurotrophic control" To meet the objections of those who have followed Goldberger, he suggests that vitamin A may be rendered ineffective "in the absence of some other nutritional factor such as vitamin B_2" Mellanby adds "My criticism of many of the clinical investigations on pellagra is that too much attention has been focused on the skin and alimentary lesions and too little on the underlying nervous lesions, which seem to me the basis of the whole disease" I would like to add that there appears to be a danger that too much attention will be focused on the mere deficiency of some one or other vitamin in a diet and too little on the mechanism of the production of the pathological processes, and on the possibility of other positive factors playing a part, as will perhaps be realised by those with a clinical knowledge of pellagra Your leading article suggests that the time has come perhaps when so important a condition should have a less cumbrous name than "vitamin A deficiency disease," and Nicholls has already proposed the word "phrynoderma" Would it not be wiser to wait until more exact knowledge shall have become available?

In conclusion may I urge upon all those who have the opportunity of seeing these skin lesions the necessity of looking out for cases of pellagra Pellagra may easily go unrecognised, and mild cases may easily be missed —I am, Sir yours faithfully

London, W, Oct 1st HUGH S STANNUS.

THE UBIQUITOUS COLD

To the Editor of THE LANCET

SIR—During the past few weeks various reports have been published of the work done for the public health of the nation by the medical profession Has not the time now come to attack the problem of the common cold, which is, to many persons, such a real menace? The season will soon be here when a large proportion of the community gets cold after cold, against which practically nothing is being done to protect them Hay fever and asthma have attracted public attention, and their causes, prevention, and treatment are being carefully studied All doctors who have to deal with diseases of the ear nose, throat, or chest agree that a cold is the starting point of many equally disabling conditions And yet there is no concerted action to discover an adequate treatment for a cold in the head or the means for its prevention

I am, Sir, yours faithfully,
GORDON TIPPETT
Medical Superintendent, Nordrach-upon-Mendip
Sept 28th Sanatorium

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[1] Stannus, H S Trans Soc Trop Med Hyg 1912 v 117

[2] Mellanby, E Nutrition and Disease 1934

OBITUARY

BARRY KEYTE TENISON COLLINS, M.D. Camb., F.R.C S. Edin., F.C.O.G.

On Sept 23rd Dr. B Tenison Collins, of Cardiff, had a cerebral hæmorrhage while he was on board his motor yacht off the port of Barry in the Bristol Channel Distress signals were hoisted but some time elapsed before he could be taken ashore and conveyed to Cardiff Royal Infirmary, where he died the following morning His sudden death terminated a family association with the gynæcological department of Cardiff Royal Infirmary of more than 30 years' duration. Born in 1887, the younger son of Edward Tenison Collins, one of the pioneers of gynæcology in South Wales. Dr B Tenison Collins was educated at Llandovery College, and Trinity College, Cambridge, taking his clinical course at the Middlesex Hospital He qualified M R C S, L R C P in 1914 and after holding posts as house physician at the General Hospital, Birmingham, house surgeon at the Cardiff Royal Infirmary, and extern at the maternity department of the Hôpital Boucicaut, Paris, joined the R A M C (T.F) In this capacity he saw active service in Gallipoli in 1915, in Egypt in 1916, and in East Africa from 1916 until the end of the war After demobilisation in 1918 he returned to Cardiff to work for his F R C S Edin , which he secured in 1920, and in 1921 began what was to be his life's work as assistant to the professor of obstetrics and gynæcology at the Welsh National School of Medicine In 1924 he was made junior honorary gynæcologist and obstetrician on the staff of Cardiff Royal Infirmary, and in 1931 he was promoted to the senior staff and became lecturer at the school of medicine on the retirement of Sir Ewen Maclean With these and several hospital appointments in the environs of Cardiff his professional status was soon established and he rapidly acquired a reputation as a sound gynæcologist of considerable judgment and great operative skill, as a teacher and lecturer he was clear, concise, and forceful Practice came to him rapidly and his professional services were sought over a wide area His outlook was essentially practical, he was gifted with mechanical aptitude to an unusual degree and this was manifest not only in his operative technique but in many other ways at the Royal Infirmary and in his own home. The fact that his contributions to gynæcological literature are but few is in keeping with the general reticence of his character. On committee he never spoke unless he had something of importance to say and his views thus always commanded attention and respect

DR TENISON COLLINS

[Photograph by Cradly's Studios

Dr. Tenison Collins had a kindly and essentially sanguine disposition, and his cheerful presence will be greatly missed He found time for many interests outside his professional activities One of the chief of these was motor yachting on the Bristol Channel, he was also an industrious gardener with a particularly wide knowledge of rose culture, a keen photographer, and an expert on the recent developments of wireless transmission.

He married Mildred, daughter of Mr H Brunel White, who survives him with one daughter He was particularly happy in his home life and enjoyed the friendship of a large social and professional circle, which was well represented at his funeral service on Sept 27th at the Chapel of the Cardiff Royal Infirmary

FREDERICK ANASTASIUS SAUNDERS, F.R.C.S. Edin.

Dr F. A Saunders, who died on August 27th, was a well-known figure in the Eastern Cape Province Educated at King Edward VI School at Berkhamsted, he studied medicine at University College, Liverpo and the University of Edinburgh, qualifying in 188 and taking the surgical fellowship two years later For a time he practised in Fifeshire, holding Admiralty and other appointments, but in 1892 he went to the Cape and settled in Grahamstown where he became medical officer of health and later hon medical officer to the Albany General Hospital and the Prince Alfred Infirmary. From the first he took part in medical politics, becoming president of the local medical association and of the Eastern Province branch of the B M A ; he was also a magis Dr Saunders was always drawn to soldiering and held the rank of major in the Third West Yorks Regiment , he was colonel of the First City Volun and First City Regiment as well as senior comman of the local rifle association In the South Afric war he gained various distinctions, including Langeburg medal He was also a prominent f and became district grand master of the Eas Province. A personal friend of the late Dr St Jameson, he was at one time chairman of the lo Unionist party He married first the stepdaughter the eleventh Earl of Lindsay and, in 1893, daughter of Prof Meiklejohn of St Andrews, wh survives him with five children He was buried Grahamstown on August 28th with military hono

THOMPSON CAMPBELL, M.D. Glasg.

Dr Campbell, who died on Sept 22nd in a Lee nursing-home after a short illness, had been for years medical superintendent of the Middle Sanatorium, near Ilkley Born in Glasgow, he educated at Hutchinson's grammar school Glasgow University, where he took many hono including the Sir William Gairdner prize in clinic medicine He graduated in 1895, taking the with distinction in 1900, and held house appointm at the Western Infirmary. After a voyage to In he decided to specialise in tuberculosis and excellent work at Quarriers' Homes, Bridge of We in organising and introducing new methods in treatment of tuberculous patients, going on to Ellerslie Sanatorium, Crieff, and the Ochil H Sanatorium, a newly built institution with equipment. In 1912 he entered the service of West Riding of Yorkshire as chief tuberculosis off and for seven years organised dispensaries for the examination of tuberculous patients He travelled extensively in Switzerland, Germany and America, studying methods for the treatment of tuberculosis, and finally in 1919 he was appointed medical superintendent at Middleton Here, with 300 beds for the treatment of male patients, he found scope for his energy "He made no compromise," a colleague writes, "with error or slackness in work He did not spare himself He knew every patient in his sanatorium, could tell you off hand his name, condition of his chest, including X ray examination and whether his sputum was positive or negative He knew himself what it meant to have tuberculosis and the more ill a patient the more he gave of his best He cared little for pleasure, and he spent his money freely in helping and relieving patients whom he knew to be in distress He will be greatly missed in the West Riding" Three years ago Dr Campbell was appointed one of the consulting tuberculosis officers for the West Riding He died at the age of 62 years, leaving a widow but no children

HENRY WILLIAM BEEDHAM, M.B Camb

Dr H W Beedham, who died on July 31st after a severe heart attack, studied medicine at Christ's College, Cambridge, and the London Hospital taking his degree in 1895 For some years he was engaged in general practice, first at Norwich, then at West Hampstead, and at Cricklewood In 1914 he began to specialise in ophthalmic work holding appointments as clinical or refraction assistant at Moorfields, the Royal Eye Hospital, Southwark, the London Hospital, and at King's College Hospital. He took the D O M S in 1922 In the early part of the war Dr Beedham worked in France under the Red Cross Society, and in 1916 he joined the R A M C and was soon made a captain, in 1917 he was invalided home Dr Beedham was a keen churchman, acting as churchwarden at Emmanuel Church, West Hampstead for many years He held the position of chairman of the medical board of the Church Missionary Society for six years He was beloved by all those who worked with him

MEDICAL NEWS

HOSPITAL DINNERS

St Thomas's Hospital

At the old students' dinner at the Dorchester on Sept 28th Dr W L Wainwright, of Henley-on-Thames took the chair and expressed his sympathy for the younger generation The country, he feared, would soon be covered by one vast panel scheme, the day of the single man was over, and groups of five or six practitioners were needed for the work that had to be done As for the student, instead of feeling (as in the old days) that anything that wasn't in Fagge, Briscoe, and Gray simply could not be true, he was overwhelmed with text books and advisers, though better scientifically he had not half such a good time Sir Arthur Stanley having recalled the services of Dr Wainwright's father as his predecessor in the treasurer's office, reported that the reconstruction of the out patients' department is proceeding according to plan By August of next year it should be fully open, and thanks to the workings of compound interest, and conversion of war loan on an unused legacy it would be opened without incurring fresh debt The reconditioning of all the wards was also in progress, and only two blocks had still to be done Unfortunately £3000-£4000 would have to be spent—it seemed like waste—on the stonework of the roof some of which was in a dangerous condition Within the last few days however, the attention of the authorities had turned or rather *been* turned, to the more interesting claims of College House (loud cheers) where the accommodation that had been ample for 16 or 17 residents was evidently insufficient for 31 The site was limited but it had been decided to do what was possible Prof L S Dudgeon the dean of the medical school, thought it very fortunate that economy had prevented the building of a new school across the road, at a cost of about a million the result had been the remarkable scheme of improvement on the present site After speaking of the losses St Thomas's had sustained during the year by the deaths of Sir George Makins Dr J L Birley, and Dr L W Shelley he referred to changes in the present staff Prof Le Gros Clark had moved to the chair of anatomy at Oxford where the regius professor of medicine, the Waynflete professor of physiology, and the professor of anatomy would all be St Thomas's men His place had been taken by Dr A B Appleton while Dr Reginald Hilton and Dr H K Goadby had become assistant physicians and Dr A J Wrigley assistant obstetric physician In athletics the school had not done particularly well—not that he thought it mattered They had won the rowing the tennis and the hockey, but he for his part thought it would be an excellent thing if cup ties were henceforth abolished The liaison with Lambeth Hospital was proving fruitful, and useful arrangements had been made for receiving maternity students two at a time for a fortnight, at Balham Hospital By far the greatest event in London for many years however, was the new coöperation between Bart's Guy's, and St Thomas's, and in proposing the guests he coupled the toast with the names of Mr W Girling Ball and Mr W M Mollison, deans of the sister schools Mr Girling Ball, in reply, said the coöperation was not yet complete, and said the situation reminded him of the man who gave a swimming bath to a lunatic asylum and later visited the superintendent "Yes," said the superintendent 'they are getting on splendidly—diving off the high board diving off the low board Heaven knows what will happen when they get the water in'" Sir Cuthbert Wallace, recalling memories of the chairman at various stages of his career expressed a doubt whether the consultant and specialist branch of the profession really had any effect in forming the public's opinion of what doctors are really like It was to the general practitioner that people turned when in trouble, and with men like Wainwright might safely be left the reputation of the profession and of St Thomas's

St Mary's Hospital

The annual dinner of past and present students was this year held for the first time in the library of the new medical school Dr P Montague Smith presided over a gathering of about 120 people Mr Duncan Fitzwilliams senior surgeon to the hospital, proposing the health of the chairman in his usual genial manner, congratulated the hospital and the dean on the enterprise which had procured for the school a new building and on the fact that for the first time the dinner could be held actually in the school He gave an amusing account of the chairman's early days and of his adventures in obtaining his M D and F R C S and mentioned his activities both at the Princess Louise Hospital, where he seemed to fill every important position in Masonry and at the Harveian Society Few, he said were as wise as the chairman looked Dr Montague Smith replying welcomed the vice-chancellor of London University, and spoke of some of the distinguished past students of St Mary's He congratulated the hospital on having raised nearly £100 000 for enlargement of its buildings and for the new nurses' home and stated that already 100 more beds were provided than there were ten years ago All the money subscribed was given in trust for those working in the hospital the school and the inoculation department; and the three must work as one and realise their wide responsibilities Dr C M Wilson the dean replying to the toast of the medical school proposed by the chairman, said that the visit of the King had been the great event of the year, but the building he had opened was only the means to an end This end was to get the best men and to turn out the best students He had been forced now to turn away one of every three applicants, and the students entering were of a fine type The school had won both the first and "A" cups at both Rugby football and cricket—a feat which no hospital had ever achieved before

King's College Hospital

The annual dinner of past and present students was held at the Connaught Rooms on Sept 29th, with Dr. Wilfrid Attenborough, of Farnborough, Hants, in the chair, and was attended by well over 100 members of the school The toast of the hospital and medical school was proposed by the chairman, who said that although himself a student at the old hospital in Lincoln's Inn he had kept in continuous touch with the new hospital at Denmark Hill He referred with regret to the departure under the age limit of their senior surgeon, Mr Arthur Edmunds, whose first house surgeon he had been, and to the great service he had given to the hospital He spoke also, with appreciation, of the heavy pioneer work of organising the nursing service of the new hospital which had fallen to the former sister matron, Miss M. E Ray, R R C, whose death had taken place recently In the near future a new building for private patients would be erected as well as the remainder of the nurses' quarters

In the medical school the past year has been one of consolidation, but a fair amount of new construction had still to be done. Over £40,000 had already been paid out and, owing largely to the fine efforts of the dean emeritus, Dr Willoughby Lyle, so far it had not been necessary to borrow any money. From the academic standpoint the past year had been a successful one, a member of the medical school had obtained the Murchison scholarship for clinical medicine, awarded alternately after a competitive examination by the University of Edinburgh and by the Royal College of Physicians of London Since 1922 this scholarship had been awarded to King's College Hospital men on six occasions out of a possible seven, when it had been available for members of the London medical schools The number of students had steadily increased. In 1915 the total number in every stage of the curriculum was 55 and to-day the corresponding number was 383 The dean, Dr J. A. Drake, in response to the toast, welcomed the guests of the evening who included Mr. W R Halliday, principal of King's College, and Prof D M Blair, dean of the medical faculty of King's College, and thanked the college authorities for the very friendly way in which the numerous questions relating to students at the college and hospital had been approached.

St. George's Hospital

The school dinner at Claridge's on Sept 29th was in effect a farewell to its chairman, Mr W Fedde Fedden, who is shortly retiring from the surgical staff His colleague and opposite member on the medical side, Dr J A Torrens, spoke of him in proposing his health as a man of exceptional single-mindedness who had practised surgery for the sake of surgery, and this verdict was endorsed by the ovation when he rose to reply. It was, said Mr Fedden, 39 years that day since he entered St George's, which was then a complete medical school, taking all the pre-medical subjects Manners were strangely different As a resident he was reproached for smoking a cigarette on the steps of the hospital, and it was good form to attend an inquest in a top hat and frock coat. There was of course no electric light, each R M O. being allowed two candles, X rays were just coming in, the apparatus being wheeled from one ward to another and used only for fractures. Laparotomy was rare, and it was the rule to do an abdominal section only after all the surgeons had been called in consultation Perineal section was common, but he saw only four operations for appendicitis during six months' residence Slater was then doing pioneer work in bacteriology, and Rolleston morbid histology in a minute room off the museum In the theatre there was no steriliser for dressings or towels and no gloves were worn. The throat department, which arose from the needs of operatic singers, was under the care of a physician From the past Mr Fedden turned with some anxiety to the future. The working parts of the hospital are, he said, wearing out, it must be rebuilt either in situ or elsewhere The theatres are so obsolete that in a few more years they might be taken bodily away to a historical museum If building and equipment could be financed, whence was to come the money for maintenance ? The voluntary principle, he said, is dying and the time drawing near when some form of aid, State or municipal, would be required He spoke of the va clinical material at L C C hospitals and of the need to coöperate with them Contributory schemes were to be encouraged if some proportion of the fees were allotted to medical attention Finally, the hospital must have private paying wards or it would be left behind But when all was said and done, St. George's students were well-picked men of the right type, they turned out the right stuff, and the relations between staff and student were always good The other toast of the evening, that of the hospital and medical school, was proposed by Sir Stanley Jackson, a member of the house committee, who described himself pathetically as the only layman present The rapid advance of medical knowledge had, he said, upset the calculations of all the older London hospitals If it was decided to bring any one of them entirely up to date it would almost mean demolition and complete reconstruction, but the voluntary system still had a wide appeal to the public, and there was much inspiration in a great tradition In reply the dean of the medical school, Dr A Feiling, took encouragement from the remarkable record of King Edward's Hospital Fund last year, and from an entry of students more than satisfactory for so small a school He spoke of regular clinical demonstra tions at St Mary Abbot's Hospital which had now becom a formal affiliation He asked for wider publicity to given to Dr. Slater's munificent gift of £10,000 to spent on laboratories when the hospital was rebui Mr. Ashton Miller, who also replied, said it was th unanimous hope of the junior members of the school the present site of the hospital would be retained

Middlesex Hospital

This has been a great year in the history of the Middle Hospital, said Dr. E A Cockayne, presiding at the Savo Hotel on Monday last. When he heard that the old was doomed he had scarcely thought to live to see but now the final contracts had been signed, and onl £80,000 or so was needed to complete it for the hospital centenary next year The Woolavington wing for pay patients had been opened in January; thanks to Meyerstein's gift of £100,000 a department of X therapy, second to none, would be the complement of department of radiodiagnosis already provided by Collins; and Mr S A Courtauld had crowned a long of benefactions by giving £15,000 to fit up a unit of clinic research This was a new department in clinical pra long desired by the Medical Research Council, and would bring the professors of biochemistry and pathol into closest touch with the clinical staff A new cl theatre would be opened early next year, the X diagnosis department in February or March, and X ray treatment department by July His successor the chair should be able to announce the completion the work Mr. Courtauld, chairman of the council the medical school, spoke of the amenities of the Wo avington wing, and said he thought the clinical would be open by Christmas Dr H E A Boldero, the described the sorrow he had brought to the homes would-be Middlesex students who had been turned The new clinical research unit, he said, would c six smallish wards, each with room for one, two, or p sibly three patients, and Prof E C Dodds and Pr Samson Wright would have a share in their dispo The clinical lecture theatre, holding up to 100, would useful, among other things, for post graduate cours last week's course was attended by 50 old students, uch was the enthusiasm that one man arrived seven days arly Dr Boldero was full of optimism for the new year, oth academic and athletic Dr P H Newman, as Broderip scholar, was understood to strike the discordant ote of complaint proper to his office, while Mr A E Webb-Johnson, after rebuking him, was equally appro riate in his management of a long list of guests, including Surgeon Vice Admiral Sir Robert Hill Lieut General A Hartigan, Major General J W West, and other epresentatives of the Services, the vice chancellor and ther officers of London University, the mayors of Marylebone and St Pancras, Dr C D S Agassiz, of St Mary Abbot's, and Dr James Carver of Archway Hospital, and the regius professors of medicine at Oxford nd Cambridge Sir Farquhar Buzzard said that before oing out to dinner he always read the Warning Notice f the General Medical Council, but he was taking the isk of associating himself with unqualified persons in eturning thanks for a happy evening Dr R A Young roposing the chairman, attributed Dr Cockayne's twin nthusiasms for pediatrics and lepidopterology to early eading of Chavasse's "Advice to a Mother"

Westminster Hospital

There was an unusually large gathering at this year's dinner, held at the Trocadero on Sept 29th, because many old students came to do honour to Mr William Turner on his retirement from the active staff It was Mr Turner's evening, and almost every speaker whatever he toast, found himself expressing respect and affection or the hospital's senior surgeon Mr G T Mullally the irst to do so, also referred in warm terms to the "man who regenerated the school after the damage done by he war" (Sir Stanley Woodwark), now succeeded by Dr Adolphe Abrahams as dean Speaking of the changes mpending in the structure of the hospital itself, Mr Mullally felt confident that, whatever these changes might finally be, the new building would be the very last word n hospital construction Colonel H S Hingston I M S aid that even in the days when he joined the Westminster here were rumours of its removal, but it did not happen hen and it had not happened yet When Colonel Hingston sat at his feet, Mr Turner was considered ather a faddist, he insisted on the use of gloves in the perating theatre But anyone who had dressed for him must always remember the kindliness and sympathy nd perhaps best of all the courtesy, Mr Turner showed o patients, sisters, and students—a great example to he young Mr J B Neal spoke in the same sense for he present students, and Sir Stanley Woodwark even ontrived to get similar sentiments into his toast of the uests After Sir Harry Hague had replied on their behalf, Mr Arthur Evans came belatedly to the health f the evening—namely, the chairman yet had no ifficulty in finding fresh reasons for praising "this fine rst-class honest surgeon"—a man who, when asked to a mile was always willing to go twain Mr Turner reply, said that in the length of time he had served the staff (37 years) he came fifth in the hospital cords, one man had served 53 The last 30 years owever, had been remarkable both in the history of the untry and of the hospital There were two things he d wished to do before leaving one was to establish proper club for the students with a refectory where ey could meet members of the staff every day in social ntact That was going to be done The other was see an amalgamation with a sister hospital, for there s all the difference in efficiency between 2 0 beds d 700 This now seemed to be a lost cause and the ans were already out for the nurses home and medical hool on the new site If these were approved the rses home would go straight on and a beginning was o to be made with the medical school if money could found In conclusion Mr Turner spoke of his con uing work in private practice and of his friendly asso tion with Mr Evans and Mr Rock Carling in a team ich had always worked with unanimity and concord speeches ended with a vote of thanks to the secre es amusingly proposed by Dr Abrahams, and an ally witty reply from Mr Aubrey Goodwin

University of London Medical Graduates Society

The autumn extra metropolitan dinner took place on Sept 28th at Queen's College, Cambridge Mr W. McAdam Eccles, the president, announced that the society which was founded in 1928, now had 548 members, of whom 54 resided overseas In reply to the toast of the guests, Sir Gowland Hopkins, P R S, said he believed that the day had gone when the laboratory worker was not considered a colleague of the clinician for control experiments could but rarely be carried out in the ward and the laboratory, where they could, was thus of real value Mr Eccles, in proposing the health of the president of Queen's and Mrs Venn, mentioned the very long association of the Venn family with Cambridge and its colleges Mr Venn, in reply, said the time was passing when an individual college would be distinguished by one faculty over others, and that Queen's had now its share of medical undergraduates

Communications relating to the society should be addressed to its hon secretaries at 11, Chandos-street, London, W 1

Chartered Society of Massage and Medical Gymnastics

The annual dinner of this society is always a pleasant function, at which the cordial relations between members of the society and the medical profession are manifest This year the meeting place was the Café Royal, where, on Sept 26th, Mr R C Elmslie presided over a large gathering which included many distinguished doctors as official and private guests Dr A H. Douthwaite proposing the toast of the society, recalled its modest beginnings, the therapeutic possibilities of massage and medical gymnastics were not generally realised until the war, when surgeons and later the public began to appreciate them In 1920 the Chartered Society was formed with a membership of 3000 which had now risen to 9000 If during the last few years the market had appeared to be overstocked it was because the medical profession had been slow to recognise and reward the loyalty of a society whose members are pledged to accept as patients only those referred by a doctor The slump was however, now over, and with Mr Elmslie as leader the society might well look forward to a prosperous future for itself and its individual members Mr Elmslie, in reply endorsed the view that medical practitioners all over the country were now using and appreciating the services of members of the society working in their districts The progress of the proposed official register of workers ancillary to medicine had for the moment been held up by the reluctance of the Board of Trade to grant the necessary facilities The society itself had prospered during the year it had increased the size and democratic constitution of its council and had secured exemption for its members from certain local licensing regulations and from inspection by lay authorities Two additional examinations had been instituted (1) in medical hydrology and (2) in electrical treatment for blind candidates Dr F W W Griffin had been appointed editor of the society's journal The toast of the guests was proposed with grace by Miss S Grafton, C S M M G Sir Holburt Waring in his response hoped that future legislation would prevent treatment of patients except under supervision by those who had not been educated in the art of diagnosis Mrs Gilmon Reid member of the Australasian Massage Association conveyed greetings from her colleagues, and spoke of the need for reciprocal recognition between members of accredited societies in different parts of the Empire The toast of the chairman proposed by Miss H S Angove C S M M G was received with musical honours and the company adjourned to dance in cheerful mood

Beit Memorial Fellowships

Lord Macmillan has been appointed a trustee of the Beit memorial fellowships for medical research as a [illegible] to the late Sir James Kingston Fowler, M D The [illegible] trustees are Sir Alfred Beit, Mr W [illegible], Lord Onslow, Lord Rayleigh, F R S, Mr [illegible] LL D, and Sir John Rose Bradford, F R S

University of Oxford

An election will be made to the Staines medical research fellowship in the course of the Michaelmas term The fellowship, which is tenable for a maximum period of five years, has an annual stipend of £400, and is offered for research in one of the medical sciences in Oxford. Applications should be sent to the rector of Exeter College before Nov 1st

University of Leeds

At recent examinations the following candidates were successful —

M B, CH B

Part I—T K Cooke, F A Crosfill, M A Kader, C V Light, O Scarborough, F A Shackleton, Helene E Sykes, J D F Thornton, and H L L Wilson

Part II—F B Coates, G M Davies, R S Illingworth, B Jackson, K I Johnstone, G J Kearney, E Lodge, L Rabinovitch, J T Rhodes, H R Rollin, and L A Westwood

Part III—K I Johnstone (with second-class honours), F B Coates, G M Davies, R S Illingworth, B Jackson, G. J Kearney, E Lodge, J. T Rhodes, L A Westwood, and W. Zemsky.

L D S

A Cromack, S R Fell, D N Hirst, M Jackson, and A G Olver

D P M.

A J Bain, H Burt, and J M Frew.

D P H

J Fielding, G P Holderness, and J Q Mountain

Manchester Medical Society

This society, which is celebrating its centenary, has arranged an exhibition at the new central library, illustrating the history of medicine in Manchester It will be open till Oct 20th For his address to the centenary meeting (followed by the centenary dinner) on Wednesday last, Dr Bosdin Leech, the president, chose the title Some Picturesque Episodes of Manchester Medical History A centenary service will be held next Sunday at 3 30 P M in Manchester Cathedral with the Bishop of Middleton as preacher

South-West London Medical Society

This society, under the presidency of Dr W J Morrish, holds its annual dinner on Oct 10th and its first meeting on Oct 17th, when Dr Russell Reynolds will give an address on cineradiography On Nov. 14th there will be a lecture by Dr L J. Witts on the diagnosis and treatment of anæmia, and on Dec 12th Dr Z. Mennell and Dr M D Nosworthy will open a discussion entitled Ether is Not Dead Other speakers will include Dr Donald Paterson, Dr W E Lloyd, Dr G E S Ward, and Mr Terence Millin The Bolingbroke lecture will be given on June 12th by Dr Robert Hutchison, whose subject will be Constitutional Medicine The meetings are held at the Bolingbroke Hospital, Wandsworth Common, at 9 P M, and the honorary secretaries are Dr E G Housden, 51, Longley-road, S W. 17, and Dr. A W Wells

Fellowship of Medicine and Post-Graduate Medical Association

Dr A E Clark-Kennedy will speak at the Medical Society of London, Chandos-street, Cavendish-square, W, at 2 30 P.M on Oct 9th on ataxia, and on Oct. 16th on giddiness Courses of instruction include a week-end course at the Royal Chest Hospital, City-road (Oct 13th and 14th), an all-day course on medicine and surgery at the Metropolitan General Hospital, Kingsland-road (Oct. 8th to 20th), an all-day course on cardiology at the National Hospital for Diseases of the Heart (Oct 8th to 20th), an afternoon course on ophthalmology at the Royal Westminster Ophthalmic Hospital (Oct 15th to Nov 3rd), an all-day course on gynæcology at the Chelsea Hospital for Women (Oct 22nd to Nov 3rd), an all-day course on neurology at the West End Hospital for Nervous Diseases (Oct 29th to Nov 3rd), a week-end course on clinical surgery at the Royal Albert Dock Hospital (Oct 20th and 21st); and another on chest disease at the Hospital for Consumption, Brompton (Oct 27th and 28th) Courses of instruction are open only to members and associates, and further particulars may be had from the secretary of the Fellowship at 1, Wimpole-street, W 1.

A New Standard of Housing

Speaking at Plymouth on Monday last, Sir Hilton said that under the new Housing Bill local auth would be asked to find out the actual need for hous remedy overcrowding and to provide whatever n of houses should be thus found to be required. Government was, he said, setting a standard which w provide for the separation of the sexes over 10 years ol and space for the increasing family Housing would be asked to accept responsibility for providing additional accommodation at appropriate rents, finan help to be given if they could not do without it a fixed date it would become an offence for either land or occupier to overcrowd a house in excess of the standard of accommodation, but until a reasonable of additional accommodation had been made it would defence that the overcrowding preceded the date in the Act.

Ultra-violet Irradiation for Nurses

It is announced that at Middlesbrough muni hospital nurses on night duty receive artificial treatment

Sir Alfred Fripp Memorial Fellowship

This fellowship has been established with the of promoting the advancement of knowledge and res in psychology through the study of children in he and in disease. It is of the annual value of £300 is tenable for two years Further particulars ma had from the dean of Guy's Hospital medical school, S who should receive applications not later than Oct

Post-graduate Work in Newcastle

The winter session of post-graduate work under auspices of the University of Durham College of Medi Newcastle-on-Tyne, opens on Sunday Oct 7th general course consists of classes on Thursdays f 1 30 to 5 30 P M onwards, starting on Oct 11th, at Royal Victoria Infirmary There will also be a course in midwifery and gynæcology on Wedne from 3 P M Classes for clinical instruction in medi and surgery are held at the Newcastle General Hos every Sunday from 10 30 A M Applications for partic tion in the general course should be made at once to registrar of the College of Medicine

British Hospitals Contributory Schemes As

The third annual conference of this association held recently at Bristol under the chairmanship of Col B J T Ford, the president It was reported tha schemes are now affiliated to the association, and the number of contributors is approximately 4,000, A provisional agreement with the Treasury was under which any civil servant employed in the served by an affiliated scheme who is already, or later become, a member of that scheme, will be an opportunity of having his contribution deducted f his salary, the arrangement also provides for the tinuance of the deductions after retirement In a on the work of the Health Section of the League of N Dr Melville McKenzie, medical officer of that st suggested the possibility of the English contribu schemes developing into an international sche beginnings have been made in various parts of the In the discussion upon a paper on municipal hosp in relation to contributory schemes prepared by Arthur Atkinson, chairman of the Hull voluntary council, read in his absence, Dr Peter McDonald that, generally speaking, the municipal hospital is as efficient as the voluntary hospital, though there exceptions The supply of hospital beds, he dec is inadequate, and will become more so when have been trained in the hospital habit He th the municipalities would be encouraged to suppl lack if they could look for payment towards mainten from contributory schemes It was promised that executive of the association would draw up a contributory scheme as a basis upon which local may work.

st-graduate Lectures at Hampstead

The fifth winter session of post graduate lectures at he Hampstead General and North West London Hospital ens on Wednesday, Oct 17th, at 3 P M, with an address Patient and Doctor, by Sir Henry Brackenbury rther lectures will be given at 4 P M on Wednesdays, om Oct 24th to Dec 12th, and their titles will appear h week in our Medical Diary

chnical Aspects of Emulsions

A symposium on this subject, organised by the British tion of the International Society of Leather Trades' emists, will be held at the Royal Society of Arts, John eet, Adelphi, London W C, on Friday, Dec 7th, from M to 6 P M, with Prof F G Donnan, F R S, in the r The organising secretary may be addressed at Market-street, S E 1

Medical Diary

formation to be included in this column should reach us roper form on Tuesday, and cannot appear if it reaches ater than the first post on Wednesday morning

SOCIETIES

AL SOCIETY OF MEDICINE, 1, Wimpole-street W
MONDAY, Oct 8th
United Services 4 30 P M Major General P H Henderson Some Milestones of Achievement in Army Hygiene (Presidental address)
TUESDAY
Therapeutics and Pharmacology 5 P M Prof J H Burn The Control of the Blood Pressure (Presidental address)
FRIDAY
Clinical 5 30 P M (Cases at 4 30 P M) Dr R W B Ellis (for Dr E A Cockayne) 1 Collapso Bronchiectasis in a Child aged 5½ Dr S Gilbert Scott 2 Spondylitis Adolescens Treated three years ago by Wide Field X ray Therapy of Low Intensity Dr Courtenay Evans 3 Aortic Disease of Unusual Evolution
Ophthalmology 8 30 P M (Cases at 8 P M) Mr Ransom Pickard The Causation of Herpes Ophthalmicus (Presidental address)

DICAL SOCIETY OF LONDON 11, Chandos street W
MONDAY Oct 8th —8 30 P M Lord Horder Medicine and Morals (Presidential Address)

DDINGTON MEDICAL SOCIETY
TUESDAY, Oct 9th —9 P M (Great Western Royal Hotel, Paddington W), Prof F Langmead Significance of High Blood Pressure

CHEMICAL SOCIETY
SATURDAY, Oct 13th —2 30 P M (Biochemical Laboratory, Cambridge) Short Communications

DICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY
THURSDAY, Oct 11th —8 30 P M (11 Chandos street W) an Address by the Chairman, Dr J C Young

AL SANITARY INSTITUTE
FRIDAY Oct 12th —5 P M (Town Hall Sunderland) Dr A Stuart Hebblethwaite Vermin and Slum Clearance Dr H A Cookson Anæmias and Preventive Medicine

ECTURES, ADDRESSES, DEMONSTRATIONS, &c.

AL COLLEGE OF SURGEONS Lincoln's Inn fields W C
WEDNESDAY, Oct 10th, and THURSDAY —5 P M Dr Arthur Baldwin Duel Operative Treatment of Facial Palsy

LOWSHIP OF MEDICINE AND POST GRADUATE EDICAL ASSOCIATION 1 Wimpole street London, W
MONDAY Oct 8th, to SATURDAY Oct 13th —MEDICAL SOCIETY OF LONDON Chandos-street Cavendish square W, at 2 30 P M on Tues Oct 9th Dr A L Clark Kennedy Ataxia —METROPOLITAN GENERAL HOSPITAL, Kingsland road E All day course in medicine and surgery —QUEEN'S HOSPITAL FOR CHILDREN Hackney road All day course in diseases of children —ST JOHN CLINIC AND INSTITUTE OF PHYSICAL MEDICINE Ranelagh road S W Course in physical medicine daily at 8 P M —ST JOHN'S HOSPITAL FOR DISEASES OF THE SKIN Leicester square W C Course in dermatology in the afternoons and evenings Lectures at 5 P M —NATIONAL HOSPITAL FOR DISEASES OF THE HEART Westmoreland-street W All-day course in cardiology —ROYAL CHEST HOSPITAL City road, E C Week-end course in diseases of the heart and lungs on Oct 13th and 14th. (Courses of instruction are open only to members and associates of the Fellowship)

IVERSITY COLLEGE HOSPITAL POST-GRADUATE EMONSTRATIONS
THURSDAY, Oct. 11th —10 A M Dr C Bolton Hæmatemesis 11 A M Prof T R Elliott Demonstration of cases Mr S L White Practical Details of Radium in Gynæcology Noon Mr E K Martin Surgical Treatment of Gastric and Duodenal Hæmorrhage Mr H Kisch Demonstration of cases and New Method of Treatment (at Out patient Department Royal Ear Hospital) 2.30 P.M., Dr H P Himsworth The Control of Diabetic Treatment 3 30 P.M. Dr F M R Walshe Epileptiform Fits and Their Treatment Dr R W A Salmond Treatment of the Leukæmias by X Rays
FRIDAY —10 A.M., Dr A M H Gray Clinical Demonstrations Dr J W McNee Differential Diagnosis in Jaundice 10 30 A M Mr E W Watkyn Thomas Some Recent Work on Deafness 11.30 A M Mr C W Flemming Foot-strain Mr F J F Barrington Hæmaturia 12 15 P M Mr C Dee Shapland Recent Developments in the Surgical Treatment of Detachment of the Retina 1 30 P M, Mr A J Gardham Demonstration of Radium Cases 2 30 P.M Mr Julian Taylor Head Injuries 2 30 P M, Mr Myles Formby Ear Nose, and Throat Problems commonly met with in General Practice (at the Royal Ear Hospital) 3 30 P M, Dr E A Blake Pritchard Effect of Injuries on the Development of Diseases of the Nervous System (These demonstrations are open only to former students of the Hospital)

WEST LONDON HOSPITAL POST GRADUATE COLLEGE Hammersmith W
MONDAY, Oct 8th —10 A M medical wards skin clinic 2 P M, surgical and gynæcological wards medical, surgical eye and gynæcological clinics 4 15 P.M., Mr Green Armytage Gonorrhœa in the Female
TUESDAY —10 A M medical wards 11 A M, surgical wards 2 P M medical surgical and throat clinics operations 4 15 P M, Lecture, Dr Konstam Diseases of the Spleen
WEDNESDAY —10 A M children's ward and clinic 2 P M medical wards, medical, surgical and eye clinics. gynæcological operations
THURSDAY —10 A M, neurological and gynæcological clinics 11 30 A M, fracture demonstration 2 P M, medical, surgical, eye, and genito urinary clinics, operations
FRIDAY —10 A M, skin clinic. Noon, lecture on treatment 2 P M, medical surgical and throat clinics operations
SATURDAY —10 A M medical and surgical wards surgical and children's clinics
The lectures at 4 15 P M are open to all medical practitioners without fee

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL Denmark hill S E
THURSDAY Oct 11th —9 P M, Mr C P G Wakeley Tumours of the Breast and their Treatment.

CENTRAL LONDON THROAT NOSE, AND EAR HOSPITAL Gray's Inn road, W C
MONDAY Oct 8th-13th, Intensive course in Laryngology Rhinology, and Otology (second week).
FRIDAY —4 P M, Mr Douglas Harmer Treatment of Malignant Disease in the Upper Jaw (Annual address)

NATIONAL HOSPITAL, Queen-square W C
MONDAY Oct. 8th —3.30 P M, Dr Carmichael Physiology of the Cerebro spinal Fluid
TUESDAY —3 30 P M., Dr Denny Brown The Physiology of Muscle
WEDNESDAY —3.30 P M Dr Collier Clinical Demonstration
THURSDAY —3.30 P M Dr Denny Brown The Physiology of Nerve Fibre
FRIDAY —3 30 P M Dr Bernard Hart The Psychoneuroses Out patient clinic each day at 2 P M

LONDON SCHOOL OF DERMATOLOGY, 49, Leicester square W C
TUESDAY Oct 9th —5 P.M. Dr M Sydney Thomson Animal Diseases Communicable to Man
WEDNESDAY —5 P.M Dr I Muende, Introduction to Histopathology of the Skin. (Chesterfield lectures)

GRESHAM COLLEGE Basinghall-street, E C
TUESDAY, Oct. 9th-12th —Daily at 6 P.M. Dr J Allison Glover Rheumatic Diseases

ROYAL INSTITUTE OF PUBLIC HEALTH, 23 Queen square W C
MONDAY, Oct 8th TUESDAY and WEDNESDAY —4 P M Prof W J Tulloch Diagnosis of Small pox and the Investigation of Vaccinia by Laboratory Methods, (Harben lectures)

INSTITUTE OF HYGIENE 28 Portland place, W
WEDNESDAY, Oct 10th —3 30 P.M Sir Pendrill Varrier-Jones Economics of the Tuberculosis Problem

MANCHESTER ROYAL INFIRMARY
TUESDAY Oct. 9th —4.15 P.M., Dr T H Oliver Practical Points in Diabetes
FRIDAY —4 15 P.M., Dr F R Ferguson Demonstration of Medical Cases

WILLAN, R J., M V O, O B E, F R C S Eng, Lecturer in Surgery in the University of Durham College of Medicine

WILSON, D S P, M B Dub, F R C S Eng, Honorary Assistant Surgeon to the Salford Royal Hospital

North Riding Infirmary, Middlesbrough —The following appointments are announced —

DICKSON, D C, M B St And, F R C S Edin, Honorary Surgeon, and

CLARK, J C, M B, F R C S Edin., Assistant Honorary Surgeon

The Queen's Hospital, Birmingham —The following appointments are announced —

BARNIE-ADSHEAD W E, F R C S Eng, honorary obstetrical and Gynæcological Surgeon,

HEATHER, J C, M D, M R C P Resident Medical Registrar;

LEWIS, E E, F R C S Eng, Resident Surgical Officer, and

HARDMAN, JAMES M B Birm, Resident Surgical Registrar.

Sheffield Royal Hospital —The following appointments are announced —

SIMPSON, GRAHAM, F R C S Eng, and WILSON, A GARRICK, M C, F R C S Eng, Honorary Consulting Surgeons;

WILSON, J B FERGUSON, M S Lond, F R C S Eng, and YATES, H BLACOW, F R C S Eng, Honorary Surgeons;

ANDERSON, J C, F R C S Eng, Honorary Assistant Surgeon; and

HYNES, W, M B Leeds, F R C S Eng, Surgical Registrar

West London Hospital —The following appointments are announced —

WALTON, W F, M R C S Eng, House Physician,

REID, R G, M B Lond, House Surgeon, and

THOMAS, M J H, M R C.S Eng, House Surgeon to Ear, Nose, and Throat Department

London County Council Hospital Staff —The following appointments, promotions, and transfers are announced A M O (I) and (II) = Assistant Medical Officer, Grades I and II

WHITTINGHAM, E B, M B. Liverp, F R C S Eng, D P H, A M O (I), St Alfege's

O'REILLY, T J, M D Dub, A M O (I), Mile End

RITCHIE T H W, M D Belf, A M O (I), Queen Mary's Hospital for Children

GALLEN, A F A, M B Glasg, A M O (I), Colindale

PENRY, J, M R C S Eng, A M O (II), St Charles'

KAHAN, A, M B Lond, A M O (II), St Leonard's

MOWLEM, A R, M B N Z, F R C S Eng, A M O (I.), St James'

BREEN, G E, M D N U I, D O M S, A M O (I), Brook

Certifying Surgeons under the Factory and Workshop Acts · Dr P McDIARMID (Fochabers District, Morayshire), and Dr A LEIGH (Chester District, Cheshire)

Vacancies

For further information refer to the advertisement columns

Aberdeen County, Public Health Department —Asst M O H £500

Albert Dock Hospital, Connaught-road, E —Res M O. At rate of £110

Altrincham General Hospital —Sen and Jun H S's At rate of £150 and £120 respectively

Bath and Wessex Children's Orthopædic Hospital, Combe Park —Hon Visiting Surgeon Also Res Asst Surgeon £350

Belgrave Hospital for Children, Clapham-road, S W —H P, and H S Each at rate of £100

Birmingham, Queen's Hospital —Asst Obstet Surgeon Also Physician to Out-patients Each £50

Brighton, Sanatorium and Infectious Disease Hospital —Jun Res M O At rate of £250

Bristol General Hospital —Hon Physician

Bristol Royal Infirmary —Hon Surgeon Also Hon Asst Surgeon

Burnley Municipal General Hospital —Jun Res M O £150

Cambridge Addenbrooke's Hospital.—Res Anæsthetist and Cas O Also H S to Spec Depts Each at rate of £130

Cancer Hospital, Fulham-road, S W —Asst Radium Officer. £350

Cheltenham General and Eye Hospitals —H S £300

Chester Royal Infirmary —H S £150

Children's Hospital, Hampstead, N W —Res M O At rate of £150

City of London Hospital for Diseases of Heart and Lungs, Victoria Park, E —H P At rate of £100.

Coventry and Warwickshire Hospital —Res H S £125

Dewsbury and District General Infirmary —H S £150

Eastbourne, Princess Alice Hospital —Res H S £150

Eastbourne, Royal Eye Hospital, Pevensey-road —H S £100

Guildford, Royal Surrey County Hospital —H S At rate of £150

Guy's Hospital, S E —Demonstrator in Anæsthetics £50.

Hampstead General and North-West London Hospital, Haverstock-hill N W —H S At rate of £100

Hertford County Hospital —Hon Asst Physician

Ilford Borough —Asst School Dental Surgeon £450

Infants Hospital, Vincent-square, Westminster —H P £75

King Edward Memorial Hospital, Ealing —Jun Res M O At rate of £150

King's College Hospital, Denmark Hill, S E —Jun Surg.

Lancaster Royal Infirmary —Jun H S At rate of £130

Lincoln County Hospital —Matron £225

Liverpool, Royal Southern Hospital —Res Cas O. At rate of £100 Also M O and Res Anæsthetist At rate of £60

Liverpool School of Tropical Medicine —Leverhulme Research Fellowship £600

Liverpool, Walton Hospital, Rice-lane —Third Sen Asst Res M O £350

L C C. Infectious Hospitals Service —Asst M O's £250 and £350 Also H P At rate of £120

Manchester, Ancoats Hospital —H S At rate of £100

Manchester, St Mary's Hospitals —Res Obstet Officer Whitworth-street West Hospital £175

Margate, Royal Sea-Bathing Hospital —H.S. At rate of £20

Metropolitan Hospital, Kingsland-road, E —Sen and Jun H P and H S's Also Cas O Each at rate of £100

Newcastle-upon-Tyne Eye Hospital, St Mary's-place Ophth. Surg

Oxford, Exeter College —Staines Medical Research Fellows £400

Port Elizabeth Provincial Hospital —Med Supt. £1000

Preston, County Mental Hospital, Whittingham —Res Ju Asst M O £500

Preston, High Carley Sanatorium —Asst Tuber M O £4

Princess Louise Kensington Hospital for Children, St Quin avenue, W.—H P At rate of £100

Queen Charlotte's Maternity Hospital, Marylebone-road, N W Res M O for Isolation Hospital At rate of £200

Reading, Royal Berkshire Hospital —Vacancies Each at rate £125

Rochdale Infirmary and Dispensary —Jun H S £200

Rochester, St Bartholomew's Hospital —H P At rate of £1

Royal Dental Hospital of London, Leicester-square, W.C Hon Pathologist

Royal Eye Hospital, St George's-circus, S E —Royal E Hospital Research Scholarship £100

Royal National Orthopædic Hospital, 234, Gt Portland-street, W Four Surgical Registrars Each £105. Also Hon A Surgeon

Royal Northern Hospital, Holloway, N —Med Reg £200

Royal Waterloo Hospital for Children and Women, Waterloo ro S E —H P At rate of £100

St Helen's Hospital —Jun H S £150

St John's Hospital, Lewisham, S E —Res H P, and Res Cas Each at rate of £100

St Leonard's on-Sea, Buchanan Hospital —Jun H.S At of £125

St Mary's Hospital, W —Cas H S At rate of £100

St Thomas's Hospital, S E —Associate Plastic Surgeon A. Res Anæsthetist £200

Sheffield Radium Centre.—Asst M O £400–£500.

Sheffield Royal Hospital —Hon Asst Surgeon

Shrewsbury Royal Salop Infirmary —Cas O At rate of £160

Southampton C. B —Part-time Ear, Nose, and Throat Surg At rate of £300

Southampton Free Eye Hospital —Hon Ophth Surgeon

Southend-on-Sea General Hospital —H P At rate of £100

South Shields Education Committee —Ear, Nose, and Surgeon At rate of £200

Stockport Infirmary —H P £150

Taunton and Somerset Hospital —H S. At rate of £100

Victoria Hospital for Children, Tite-street, Chelsea, S W Hon Surg Reg Also Sen Res M O £200

The Chief Inspector of Factories announces vacant appointme for Certifying Factory Surgeons at Lerwick (Shetla Earlston (Berwickshire), Cambuslang (Lanarkshire), and Port Glasgow (Renfrewshire)

Births, Marriages, and Deaths

BIRTHS

AITKEN —On Oct 2nd, at 19, Bentinck-street, W 1, to M wife of R S Aitken, M D N Z, M R.C P —a daughter

BROWN —On Sept 25th, at Dewsbury, Yorkshire, the w Dr C. Metcalfe Brown, of a son.

DEVEREUX —On Sept 26th, at Kingsley, New Milton, the of C H Devereux, M B, B S Lond, of a son

OSBORNE —On Sept 25th, at The Towers, Saltash, Co the wife of Surgeon Lt-Comdr (D) L B Osborne, of a son

TOWNSHEND —On Sept 24th, at Devonshire-place, W wife of Maurice A Townshend, M B, B S, of Ar of a son

MARRIAGES

GUIRDHAM—ADDISON —On Sept 29th, at St Mary, Wey Arthur Guirdham, B M., B Ch Oxon, of Working Mary Lacy Addison, of Weybridge

HATRICK—RUSSELL —On Sept 22nd, at Trinity C Glasgow, James Cameron Hatrick, M D, of Surbit Marah, daughter of Mr and Mrs Charles Russe Glasgow

KNIGHT JONES—CORMACK —At Mayfield South Edinburgh, on Sept 18th, Edward Knight Jones, the late Mr J T Jones and Mrs Jones, Cefn Mawr, N W to Mary Constance, daughter of Mr and Mrs J C Mayfield-gardens, Edinburgh

WOODRUFF—WHITELEY —On Sept 29th, at St Paul's Knightsbridge, S W, Keith M C Woodruff, M B, Lond, to Beatrice Evelyn Whiteley, only Colonel and Mrs C C O Whiteley, of Norbury.

DEATHS

ENSOR —On Sept 26th, at Sunny-gardens, Hendon, John William Ensor, M R C S, late of Golders Gree his 65th year

HEYWORTH —On Sept 29th, suddenly, at Belper, Alexander Frederick Heyworth, M B Camb

WINDSOR-AUBREY —On Sept 24th at Hale, Long A Somerset, Henry Wentworth Windsor-Aubrey, M Edin

WORTHINGTON —On Sept 28th, at Sutherland-road, W Es Joseph Charles Worthington, M.D Dub

N B —A fee of 7s 6d is charged for the insertion of Notic Births, Marriages, and Deaths

ADDRESSES AND ORIGINAL ARTICLES

MEDICINE AND MORALS*

BY LORD HORDER, K C V O, M D,
F.R C P Lond
PHYSICIAN TO ST BARTHOLOMEW'S HOSPITAL, LONDON

IT is my duty as well as my pleasure in the first instance to thank you for electing me to the high office of President of the Medical Society of London If I can only succeed in making my efforts on behalf of this now ancient association match my appreciation of the honour you have paid me, my year of office will not fall far short of the best that have gone before me

I should be deceiving myself if I did not know that to occupy this chair argues some recognition on your part of efforts that I have made to carry on the tradition of medicine in a manner that the founder of this Society would have wished Looking back—hateful, but alas ! in my case appropriate phrase—I think the spectacle that appals me most in regard to these efforts of mine is their discursiveness I had never realised how discursive they have been until I visited an American university a few years ago The librarian wished me to test the efficiency of his staff by naming an author the whole of whose published works might be produced for my inspection in record time Hesitating about a name he suggested my own Nemesis came a few minutes later when I was faced with a pile of books and reprints that brought to my face, not the blush of a proud father but of shame and remorse as I thought of the years of ineffectiveness that the dump represented This thought was still in my mind when, an hour later, I was asked to address a large body of students, of all colours, of both sexes and of several different professions "But what shall I talk about ?" I asked the Dean protestingly "It doesn't matter," he replied, unhelpfully I found that he was right, it didn't The incriminating pile of inconsequent literature had been placed in front of me, and I took this proof of the desultoriness of my work as the text of my address My warning seemed to go all unheeded, for cheer upon cheer greeted my urgent plea that my hearers should shun the path that I had trod

Quite a large part of what happens to us or does not happen to us, in life seems beyond our control I should say it seems beyond the control of some, I think most, of us Here and there arises a man who has the power to force into one mould most of the plastic stuff of his life, and the image he turns out at last is both beautiful, complete and monumental A Harvey, a Darwin, a Lister—how rare they are Most of us pass from mould to mould, put in a little here and a little there, and Time, impatient, turns out the wretched half baked figures which stand in a row and jeer at us

But I did not intend to be so autobiographical The genial Lettsom was himself discursive yet managed to achieve lasting fame because he did at least one big thing he founded this Society Whatever estimate the history of medicine may ultimately accord him Lettsom will have his niche so long as the Medical Society of London exists, and that is likely to be as long as London exists

I hope you will not be disappointed when I say that the title of my address has a piquancy which is quite spurious It is unfortunate that the word "morals" has become so closely attached to certain aspects of social behaviour I am not using the word in that sense this evening I use it in an older and wider sense, difficult always to define but as nearly as this can be attempted, I use it to mean the sum of the criteria governing human conduct and thought at the time being A kind of design for living, a pattern which it is considered well to follow, whether for the individual or for social groups, if you like customs and manners that have become standardised.

Changing Standards

Morals must have begun very early in man's history As we know, they are constantly changing, in some eras slowly, in others swiftly The pattern for the individual changes more quickly, and therefore sometimes more catastrophically, than it does for society in general This is fortunate for society The individual can even afford to say "I have no morals"—though by that very admission he declares his morals, which are, in effect, that he is a law unto himself—but society can never be without morals, because it would then cease to exist No doubt there are certain basic elements in the design which rarely change There are for example "the classical rules of honesty," as Sir Thomas Browne terms them, but when the seer tells us not to think that "morality is ambulatory that vices in one age are not vices in another, or that virtues which are under the everlasting seal of right reason may be stamped by opinion" we know that history does not give him the support which his sentiment seems at first sight to deserve If morals were an art only, and not both an art and a science, no doubt the pattern of life would remain much the same for generations together As it did before science began But science did, at last, get born, though the travail was long And with the birth of science, Medicine for the first time became a living thing

We have been taught to conceive of Medicine as a very ancient human institution As an art it is of course ancient, but if we strip away the litter of superstition and dogma that encumbered it even up till Harvey's time, we have very little left even *to call an art* *Hippocrates* laid down *some* basic principles which should govern the disciples of Medicine and very excellent they were But on this foundation he built no edifice for the simple reason that the bricks and mortar of science did not exist Nor did any edifice begin to arise for over 2000 years During all this long and dreary wait the only companionship Medicine enjoyed was that of Philosophy, and this was a barren alliance so far as the patient was concerned, for he could get his mental comfort from the more humanist of his teachers or from the priest, whereas for his body *the physician had very little to offer him* Even in Harvey's day, Francis Bacon complained that physicians, after the manner of spiders spun webs of sophistical speculation out of their own bowels

Modern Frankness

At first slowly against bitter opposition and then rapidly, as the new criteria became irresistible science changed the pattern of life Simultaneously science activated Medicine which made life longer and better worth living Men and women began to take control of life themselves To-day the danger is no *longer* that they are *cramped by* authority but that they may be fatigued, or even run themselves to destruction, by their freedom Realising that the causes of their unhappiness, as of their physical ills, lie in the biological sphere, they seek the physician rather than the priest.

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* Presidential address delivered before the Medical Society of London on Oct 8th.

Bewildered by the prospect which their liberty opens out, and all unaccustomed to deal with the raw material of their natures as now revealed to them, they come to the physician for guidance. To them the doctor is the realist, the link between the "fine abstraction" which still beckons, and the "particular application" for which they still hope. He is in the privileged position of the Almighty: he has, or he can have, if he will, all the evidence before him. "He that sinneth before his Maker, let him fall into the hands of the physician" Why? Because to the physician the individual is not a metaphysical constant but a physical variable and this outlook enables him to lift up the weary head and comfort the sorrowing heart. First the explanation, then the guidance, and hope, that best of tonics, is reborn

Clearly the doctor must needs be priest as well as physician. He, too, must be shriven For the patient may have gone too far along the road towards scientific economy, placing his trouble in a lower category than that to which it rightly belongs It may be the loss of his aspirations and his ideals from which he is suffering, not a mere failure to adjust his physiological or psychological balance

But at least the cards are put on the table in these days, and that is something Thirty years ago Henry Maudsley complained of the hypocrisy which led folk to condemn the coarser habits and plain speaking of their ruder ancestors whilst they themselves practised a decent concealment of their sensualities. He went on to express the view that more open dealing with a natural function would dispel much hurtful ignorance. Were Maudsley to come back to life and practise to-day, he might be surprised by the frankness with which his patients spoke of those things—a frankness not always free from a suspicion of relish. Clifford Allbutt once said that there was as much harm done by talking about things as by suppressing things, and that to familiarise evil was to tolerate it The sentiment is appropriate to much that happens in our consulting-rooms. A meticulous description of his stools proclaims a patient a hypochondriac, there is something psychopathic about the glibness with which other patients describe their sex life. I see no more reason for encouraging the latter than the former. Nor is it only from the consulting-room that modesty has fled. In the cult of Nudism we seem to have reached the apotheosis of the organic, and in the public advertisement of intimate and family relations called "sharing" we touch the limit of indecency on the psychological side. Coventry Patmore warned us that though

> "Angels may be familiar; those
> Who err each other must respect"

No doubt angels may go naked, yet not be prurient. If they have private lives these probably may be discussed without fear of scandal But the best of us are still "a little lower than the angels"

Medicine and Public Issues

I must leave the consulting-room for the larger, though doubtless not more important, arena of social morals. Did time permit it would be interesting to note however that resistance against being helped by science did not die with the Renascence. It still survives in the form of Spiritual Healing, in Nature Cures, and in the existence of people who are quaintly called Peculiar, and in those patients who tell us they "do not believe in drugs," as though drugs were a creed

Passing from the individual to the group, issues and questions which affect medicine in relation to society appear nowadays in rapid succession If medicine is still to remain humanist, and we must surely hope that it will, it behoves us to take a guiding hand in these things. In some of them we must lead, in others it is more appropriate that society should lead, Medicine examining the matter, answering pertinent questions, and being prepared to give the requisite practical help

One of the largest questions, so far as its implications go in the direction of morals as they come into relation with Medicine, is that termed birth control. Despite the fact that lay interest and inquiry are both awake and pressing on this subject, medical opinion is strangely discordant and ill-formed. The majority of medical men and women still begin practice with no instruction in contraceptive methods—a startling anachronism when we remember that memoranda have been issued to public authorities by the Ministry of Health encouraging the formation of birth control clinics and the giving of medical help to women whose lives and health make contraception desirable. In private practice patients not seldom complain that their doctors fail to give them the practical help which they have a right to exp This failure to help does not seem to be due to the doctor holding views that run counter to the principle involved, but to ignorance of methods and technique applicable to particular cases Surely this defect should be remedied without delay.

It would be lamentable if the moral fabric of society became definitely formed in this matter yet medicine failed to give the guidance which it alone can give. Or is the position after all this—that medicine itself offers a resistance because it is still influenced by that body of religious doctrine from the dominance of which, though stalwart disciples its art and science have delivered it here and th from time to time, it has never got quite free? A we worried by the responsibility of helping men an women to live full lives and yet arrange that bring children into the world shall be by design and not accident? Do we think that such help may encou extra-marital sex relations? That pregnancy sh be regarded as the only, or the chief, deterrent illicit intercourse is a terrible indictment agai individual idealism on the one hand, and against aims of social reform on the other May we hope that most thinking people realise that for man to be "faithful to his future wife" not makes the "happy husband," but provides basis of the fullest life both for the individual the race?

If there be lacking the dynamic element provid by freedom of choice as between good and evil, the is also lacking the chief incentive to progress, an we are put back once more to an era in our evolution even earlier than the garden of Eden. Moral based upon fear of penalties is entirely a static aff and was doubtless of service at the beginning human progress. Surely we are ready for a hard lesson than this Increased control in the spher of sex, like increased control elsewhere, is an inevitable result of the ceaseless probings of science That this increased control may be used for ill well as for good is a general, and not a particular result of our development True, as Emerson say

"Very few of our race can be said to be yet finished men We still carry sticking to us some remains of the preceding inferior quadruped organisation " But "the age of the quadruped is to go out—the age of the brain and of the heart is to come in And if we shall read the future of the race and the impulse to the Better in the human being, we shall dare affirm that there is nothing he will not overcome and convert, until at last culture shall absorb the chaos and Gehenna He will convert the Furies into Muses, and the hells into benefit "

But are we, perhaps, still awaiting the mandate of a completely convinced society? We ought not to wait for this We ought to be ready, with the fullest assistance so far provided by medical science, to answer in practical and positive fashion the questions put to us by those who, having emerged themselves from the thraldom of sex dominance, honestly and sincerely seek our expert help

Birth Control, Euthanasia, Eugenics

Our inability to deal constructively with the problem of birth control brings in its wake the nemesis of that social evil—or to those who consider birth control itself an evil, that worse evil—abortion Here is another matter that cries out for our full examination and advice The anomaly that allows the well to do to get rid of the unwanted hild before it is born without danger to life and o reputation, yet denies such relief to the poor, is stigma to which society is at last awakening Ve shall be asked to assist in removing this anomaly nd we must be ready with our reply

So much for the relations between medicine and he effort towards greater deliberation in respect of he entry of human life into the world What of he relations between medicine and the deliberate ermination of life? The subject of Euthanasia is n old and a recurring one We are likely to hear nore of it in the immediate future To many who liscuss it the problem seems simple but to us who re brought in daily contact with the facts there is erhaps no problem more difficult Whose life should e terminated? And by whose decision? At what evel of congenital defects, whether physical or nental should the cleavage come? What diseases re to be regarded as incurable and at what stages in hem should the cup of Lethe be drunk? Is the atient's judgment to be relied upon, warped as it so ften is, whether by his malady or by his treatment? How can we know that his mood is permanent? So few moods are More subtle still is that need to distinguish between the calculated decision of a man's intelligence and the cry of strained emotion for relief An exhortation to preserve his morale to play the man, the force of our own personality in enabling him to win through—these are not the least of our functions as doctors They are based upon an old fashioned virtue, but nature has provided no other by which the last enemy may be faced It remains to be seen if we are to be asked to relieve some of our patients of this grim fight altogether Meantime we must go through with this the hardest of all our tasks, with patience and with resource, even though we get no gratitude, but

> he hates him
> That would upon the rack of this tough world
> Stretch him out longer "

But there is another aspect of this problem We must recognise the fact that this request to end suffering by ending life is not always the cry of a spirit stricken past endurance, but rather the dramatic demand of someone whose patience, never too good, is now exhausted When such a one clamours for an overdose of morphia, I am prone to say, "I would give it to you if I were sure that you would not change your mind half an hour later " Lastly, when the demand to end life is made on behalf of someone else, it is often not the patient but the patient's friends who cannot stand the strain "Doctor, you must end this agony!" said a woman to me recently, and my reply, "Do you mean yours or your husband's?" brought home to her, if rather sharply, the real position The inalienable right of another person to live, if he so desires, had been entirely forgotten "I am sure he does not want to live" may well mean "I do not think I can possibly see him suffering any longer "

These are some of the considerations which it is our duty to advance when we are approached by laymen who believe that the institution of Euthanasia of the direct kind would be a benefit to mankind In my own judgment this is the one subject upon which, though our experience should be available to guide the decisions of others, we ought not to express strong views Our whole training and outlook are directed towards the prolongation of life and the relief of pain, physical and mental True we must distinguish between prolongation of life and prolongation of the act of dying, but having done that I think we should leave the larger decision to the developing good sense and judgment of the community, whose servants in such a matter we really are

The Eugenics movement is one which must necessarily interest us greatly But so long as we know so little concerning the laws which govern heredity there is not much of immediate importance to submit to us Always remembering however, that the problem of birth control is chiefly an eugenic affair, and a very important one But one practical issue in this field has already arrived and concerning it medicine ought to take a leading part I refer to voluntary sterilisation The Brock Report deserves the most careful study by all of us Whilst not advocating compulsory sterilisation, and so disarming those who fear any infringement of the liberty of the subject it does advocate the use of the principle in certain selected cases on a purely voluntary basis

There are other matters There is the drink problem, there are important questions in regard to food, there is industrial fatigue And if I speak of noise I risk the charge of using this chair to propagandise But that is only because the subject is topical It has seemed to some of us a duty to warn the public against an evil of which they were themselves but dimly aware Fortified by resolutions from the Royal College of Physicians and the British Medical Association we are endeavouring to stir society to save itself from noise that is needless and preventable We want the support of all our colleagues

Solidarity of View

When a patient seeks guidance in relation to his health, an aloofness on the doctor's part from the background of the sick man's life—his work, his habits, his home relations, his ambitions, his fears his joys, and his sorrows—cramps very considerably the power to help It is only through a knowledge of his character that we can hope to save him And although this principle may not extend to certain very limited, and somewhat trivial complaints there are very few patients who come to us to whom it does not apply Likewise the aloofness of medicine from questions that affect various social groups, or society in general, and ultimately determine their welfare and happiness, is to be regretted for the same reason. Morals, in the sense I am using the term, are constantly changing. Medicine has only two alternatives in regard to this changing design for living: it can guide and even to some extent control those elements in the mosaic which concern our art and science, or we can remain detached and let society take charge of itself.

If—as I think is good, indeed our duty to our fellows—we adopt the former alternative, then it is essential that examination of these elements, and guidance concerning them, be undertaken by representative bodies amongst us, rather than merely by individuals. Solidarity of opinion is much more useful than the expression of personal views The limitations imposed upon the individual by the traditions of Medicine are severe And rightly so In the first place, no amount of publicity of itself confers prestige upon the doctor, though it is perhaps wise to admit that, in these days, prestige cannot be attained without some degree of publicity Then again, no one of us, however expert in his own sphere, may take upon himself the responsibility of standing for the general body of medical opinion; indeed, in respect of the things I am now considering, the very fact that a man is expert may be a danger

It is to his colleagues, assembled in council that the individual, stirred to a protest or to a reform, should come in the first instance, and lay before them the case which, he is convinced, demands study and an expression of opinion Convinced himself, he is not likely to fail in convincing them, if his case is a good one He can thus secure the powerful aid of their corporate influence And so it should be with matters submitted by various sections of the public, or by Government—for even Government sometimes, and quite sincerely, seeks the way of salvation. It is to representative and authoritative bodies inside medicine, and not to individuals, that these inquiries should be directed for guidance

To what representative and authoritative bodies? Medicine has many societies and institutions within its boundaries Our own Society, except sometimes on evenings like the present, is appropriately engaged in purely academic discussions Its vigorous offshoot, the Royal Society of Medicine, exists for a similar purpose The British Medical Association is a body most admirably suited to guard the status and the amenities of its vast membership of doctors This function being apparent and accepted, it is quite reasonable that it should be suspect when matters of public interest are being ventilated True, in the last analysis the public interest and the interest of the doctors are identical, but this last analysis must not be assumed as being made by those who are vitally concerned in the direction of social morals

But, say some, this is just the sort of thing which might be adequately undertaken by certain health societies which have upon their committees both doctors and laymen I will say at once that, in the discussion of medical topics I distrust such mixed bodies thoroughly How can folk confer with any hope of a helpful issue if they do not speak the same language? Remain the three Colleges These are strong bodies, representative and possessed of power Together they might voice a body of opinion on any question arising within their walls or submitted to them from outside, and no impeachment on the ground of bias or parochialism could possibly be advanced. Against the Royal College of Physicians there was formerly lodged the reproach that it isolated itself from important outside affairs which cried aloud for the guidance of medicine. The stigma was not unmerited The present President is to be congratulated upon the efforts he has made to remove this reproach His invitation to discuss certain matters of general interest to the public in comitia shows that he is alive to one of the chief functions of the College, and the setting up of a committee whose sole reference is to keep the College in touch with outside affairs which have medical bearings is a most laudable action. The recent decision of the Presidents of the two older Colleges to discuss disciplinary matters and penal cases in joint council is an advance in another and equally important direction.

For whilst individually the Colleges are strong, they would more than treble their strength, and influence with the public, if the liaison between ther were closer than it is. Indeed, apart from acting in concert convening examinations, the liaison scarcel exists At present there are risks of divergence of opinion and there is duplication of discussion. A closer union is much to be desired. Has no one yet visualised an Academy of Medicine in this country, of which the Colleges are the main pillars?

Sanctity of Moral Opinion

I must not try your patience further. But lest even now, I may not have made clear what I mea by these "morals" with which I believe Medicine to be irrevocably and intimately bound up, let me, in closing, quote again from that scholar and physician Clifford Allbutt, himself one of the greatest humanists our profession has produced. Speaking of the sanctity of the moral system by which society exists he says: "Yet nevertheless, as the generations men change, and as knowledge increases, men from new points of view: and thus, whilst for s the reigning vision retains its apparent solidity, others its rays are broken or dissolved . For provisional synthesis then, the time must come when the apparition of truth can no longer command united allegiance, and criterions begin to encroach upon sanctions

In the Middle Ages, the ascetic contempt for the body—partly Stoic, chiefly oriental— . . . hid from the physician the very gates of the city into whic he would enter" But "if a social discipline fruition are to be renewed and enlarged it must upon a new synthesis as laborious and ardent as th former, and more true . . . Swiftness and stre come of union of wills and singleness of heart rath than of wisdom."

ROYAL WEST SUSSEX HOSPITAL—On Oct 1 the governors of this hospital approved, in princip of a scheme to build a maternity block on la adjoining the institution The cost of the new blo is estimated at £12,710 The governors' are that the West Sussex county council shall pay agreed sum towards the capital cost, and also mainta five of the ten beds It is estimated that the block w serve a population of 85,000 in the Bognor Regis, Chiche Petworth, and Midhurst areas An address on the ne of maternity services was given by Mr Eardley Holland of the London Hospital, who said that the scheme was attempt to bring about further coöperation between th voluntary system of hospitals and the public or count council system Though some people seemed to thin that these two were rival systems it was not so, bot were necessary, and both did their own work in their ow way. In maternity work they could help each other Mr. Holland commented on the fact that in the Ro West Sussex Hospital as in almost every general hospital in the country the obstetric department was the las started There seemed to have been a general lag midwifery, which was due not so much to lack of knowledge as to failure to put knowledge into use

THE RATIONAL ASSESSMENT OF RENAL DAMAGE

By CUTHBERT LESLIE COPE, D M Oxon,
M R C P Lond
SENIOR BEIT MEMORIAL MEDICAL RESEARCH FELLOW

THE search for the ideal test of renal function still ntinues, after the passage of a quarter of a century, provide ample opportunity for the expression of dividual views The main reason for this lack of ogress towards agreement is undoubtedly the adequacy of our knowledge of the processes, both hysiological and pathological, which are going on the kidney But to some extent also it appears to due to an inadequate appreciation of the necessary mitations of any such test Prognosis must be sed on the summing-up of a large number of riables of which the functional efficiency of the idney at any given time is only one The course of e disease process in nephritis cannot be predicted om a knowledge of the efficiency of the kidney at ny one time, or even from a knowledge of the rate which this efficiency is changing over a given period urthermore, individual patients differ in the way hey withstand a given degree of renal impairment he constitutional variables causing such differences re not within the scope of any renal function test assess, but can only be gauged by the clinician as result of prolonged empirical experience Because f this it is unfair to put too much responsibility on ests of this kind

It is very evident, moreover, that some are more seful than others, and if all of them were reliably stimating what they claim to estimate, this difference n their value would be somewhat surprising It must mean either that they do not all satisfactorily stimate the functions with which they deal or else hat some functions are more affected than others y the nephritic process, and some are more important han others in providing the information on which o base diagnosis and prognosis Which explanation s correct we do not at present know All that hould be asked of the renal function test is that it eliably estimate the particular function with which t is concerned

Criteria by which to judge how far it does so are difficult to obtain, and this is another problem which complicates the search for a reliable test It cannot at present be safely assumed that all the many partial functions of the kidney are equally depressed by a given renal lesion Hence the fact that a comparative study of any two of these functions reveals an apparent divergence cannot be taken as evidence that one of them is yielding fallacious results But if, on the other hand, two or more tests are found to indicate an equal degree of inefficiency in the nephritic kidney, then this fact may reasonably be taken as evidence that they are reliably estimating the efficiency of the kidney in respect of the functions with which they deal

In relation to the enormous amount of work which has been carried out on renal function tests the number of recorded comparisons between different types of test is surprisingly small In those that have been made little agreement, except in the roughest way, between the various tests is usually found, and no clue is obtained as to whether a function is being reliably estimated or whether the results are practically meaningless. There does exist, however, a small group of tests which agree in their estimate of the degree of impairment of efficiency in the nephritic kidney, and it is this group which I propose to consider here, since I believe that they lay claim to more serious consideration than any of the others

THE GROUP OF CLEARANCE TESTS

Of this group the most important is the urea-clearance test which is popular in America and is now beginning to attract interest in this country The other members of the group are less well known, and by reason of their greater technical difficulty are unsuitable and indeed unnecessary for routine clinical investigations But this unsuitability in no way diminishes their theoretical importance

Into a detailed explanation of the term "clearance" I do not propose to enter It is sufficient for present purposes to say that by a "clearance" is meant the rate of excretion of a substance (expressed in milligrammes per unit of time) divided by the average concentration of the substance in the blood plasma during that time (expressed as milligrammes per cubic centimetre) The application of the name "clearance" to this ratio depends on the following considerations [1]

It can easily be shown mathematically that the ratio represents a volume divided by a time, and that it represents in fact that volume of blood which would contain an amount of the substance under consideration equal to the quantity excreted in unit time in the urine If now we *assume, merely for convenience,* that the blood flowing through the kidney is completely freed or "*cleared*" *of this substance before leaving* by the renal vein, then the clearance ratio represents that volume of blood which would be so "cleared" of this substance by the kidney Whether the unit of time be taken as a minute or an hour does not in the least affect the essential conception of the clearance

Numerous accounts of the clearance are now available, especially in reference to urea, and the methods for its determination have been widely published [2,3,4]

The group of function tests which we are considering concerns itself with the excretion of several substances of widely different chemical nature but it appears that they all have one property in common For each of them the rate of excretion in the urine is, under proper conditions directly proportional to the blood concentration From this it follows that the ratio of excretion rate to blood concentration (the clearance) is a figure independent of the actual concentration in the blood over a wide range It is this figure which is believed to indicate the excretory efficiency of the kidney towards the substance under consideration

THE UREA CLEARANCE

It was from a detailed investigation by Addis [1] of the phenomena presented by the excretion of urea that the conception of a clearance emerged Addis could detect no regularity in the excretion of urea under ordinary circumstances but if a large drink of water was taken to establish a diuresis, and if urea was also ingested to raise the blood urea level then it was found that the rate of excretion of urea became directly proportional to the blood concentration, and independent of the rate of urine flow provided that this was large In other words, a constant value for the urea clearance could be obtained which was independent both of actual urine volume and of blood urea

In the need for observing these conditions the case of urea is more complex than that of other members of the group, for which the production of a large diuresis is probably unnecessary to demonstrate the linear relation between excretion-rate and blood concentration

That the urea clearance obtained under these conditions was indicating, at least approximately, the functional activity of the kidney, was early rendered highly probable by a number of facts elicited by Addis and others It was found that in cases of nephritis of increasing clinical severity the value of the urea clearance was progressively reduced. It was further shown that in mammals of different size, and even of different species, the value of the clearance varied with the weight of the kidney, and that if one kidney was removed at operation the value of the clearance was almost halved. (But not quite halved because the remaining kidney increased its activity to compensate for the loss of its fellow) From these facts the conclusion was drawn by Addis that the urea clearance was a real measure of the *mass* of functioning renal tissue.

Although this conclusion was apparently justified in the case of healthy normal renal tissue, it is not necessarily true in disease For the introduction of the word "mass" implies the making of the as yet quite unproved assumption that a given *mass* of renal tissue, if actively secreting at all, will excrete urea with the same efficiency whether healthy or diseased But this possibly false assumption only concerns the introduction of the word "mass" and in no way affects the more general conclusion that the urea-clearance test is a definite expression of the urea-excreting efficiency of the kidney.

In the interests of simplicity, and in order to popularise the urea-clearance test, Van Slyke has attempted to escape from the more rigid conditions for the test prescribed by Addis, and has introduced his own modifications (the standard and the maximum urea clearances) in which no urea is given by mouth and no attempt made to evoke an abnormally large diuresis [3] It is in this simplified form that the test appears to be under trial in this country.

Van Slyke justifies its use by the claim that in practice it yields the same information as is obtained when urea is given In this his experience was at variance with that of Addis some years earlier, but it must be confessed that when working in Van Slyke's department I also was impressed by the apparent similarity of the results of the two methods. In spite of this, however, there are indications that the simplifications introduced by Van Slyke may sometimes involve a sacrifice of reliability Fowweather for instance [5] has recently pointed out that when no urea is given very variable results may be obtained even in the normal subject, and in this his findings confirm the original observations of Addis. Again, a comparison of the urea clearance with another member of this group of function tests, the creatinine clearance, points to the same conclusion.

It has been shown that creatinine, like urea, is excreted at a rate which is directly proportional to the plasma creatinine concentration, both in man [6] and animals.[7] The creatinine clearance is determined in precisely the same way as the urea clearance, being the rate of excretion of creatinine divided by the plasma concentration. The value thus determined is 2 5 to 3 0 times as great as the urea clearance. If now, as a result of a nephritic process, the urea clearance becomes reduced to say 30 per cent. of the healthy normal figure, then it will be found in the great majority of cases that the creatinine clearance is also reduced to about 30 per cent of the normal figure for that clearance. We have in fact two independent renal function tests which agree in their estimates of the degree of renal damage [6 8] No such agreement has so far been demonstrated between the creatinine clearance and the simplified urea clearance tests of Van Slyke, carried out in the absence of diuresis or a raised blood-urea On the contrary, a long series of comparisons made in all types of nephritis by Hok Lan Ong [9] failed to reveal any parallelism I believe this failure to be because the original conditions prescribed by Addis—viz , diuresis and a raised blood-urea—were not adhered to.

Addis's explanation of the greater constancy of the results obtained under his conditions is that the raised blood-urea and the diuresis combine to produce in the kidney a condition of load, stimulating it to exert its maximum effort The encouragement of maximum effort is the basis of the great majority of tests of organ function It is unreasonable to judge of the strength of a muscle from the power of its contraction when it is not exerting itself fully Nor can the efficiency of a diseased myocardium be gauged from observation of the patient at rest in bed, unless of course it is so low that even at rest it cannot meet the relatively small circulatory demands made on it Exercise must be given to reveal all but the most advanced stages of the diminished exercise tolerance on which we base our estimate of the myocardial efficiency

The criticism has been brought against the urea clearance test that successive determinations in the same person do not give the same results. It was precisely for the purpose of reducing such variations that Addis recommended his conditions of diuresis and raised blood-urea. If they are not observed then a greater degree of variation must be expected. But even if they are, the constancy of results is admittedly not absolute, especially in healthy subjects. Nor is this surprising, for it is almost certain that the kidney, like other organs, exhibits real variations in its activity

These variations are almost certainly very largely referable to changes in the actual number of glomeruli and tubules which are active at any given time There is plenty of evidence that at times in the normal healthy kidney considerable numbers of glomeruli may be dormant, just as in muscle tissue during rest large numbers of the capillaries are closed. When either muscle or kidney is stimulated to greater effort these capillaries between the muscle-fibres or in the glomerular tufts are opened up in increasing numbers It is believed that raising the blood urea can also bring about this restoration of dormant glomeruli to activity, bringing into use almost the whole number available This action of urea has been repeatedly observed directly in frogs. It is quite possible that after urea has been given for the determination of the urea clearance the opening-up of the resting glomeruli is not quite complete, and this would explain the observed small variations in the urea clearance in a given individual But if no urea has been given and the blood-urea is not above normal limits, then 40 per cent or more of the available glomeruli may be closed, and the test carried out under such conditions will reveal an apparent functional efficiency much below that of which the kidney is actually capable. This probably accounts for the much greater variations observed in the urea clearance when no extra urea is given

In advanced nephritis the blood-urea is already raised above the normal level and it is unnecessary to give the patients extra urea by mouth Accordingly, we find much more constant results in such subjects

The kidney is constantly under load, and those parts which are still capable of functioning are continually exerting their maximum effort in an attempt to remove metabolic waste products. In the inadequate nephritic kidney there are no periods of relaxation of effort, and it is no more necessary to feed extra urea in these cases in order to obtain a reliable figure for the urea clearance than it is necessary to exercise a man with advanced heart failure in order to reveal his lowered exercise tolerance.

Another objection brought against the test is that it necessitates two analyses. This objection can scarcely be considered a serious one, since this test when properly carried out provides, I believe, as much information as the routine blood-urea and urine analyses which are more commonly performed separately in this country. Furthermore, a simple method is available whereby the urea clearance can be measured by a single procedure without its being essential to determine the actual urea concentration of either blood or urine.[4 10] This method, which is colorimetric, is only approximate, but is probably accurate enough for general clinical purposes.

A third objection is that the results depend for their reliability on the completeness with which the bladder is emptied. This is true, but as a source of error can usually be reduced to unimportance if a large diuresis can be established. Where such a diuresis cannot be provoked, as in many cases of hydræmic nephritis, or in patients with residual urine due to an enlarged prostate, it is probably wise to employ catheterisation if accuracy of result is desired.

THE CREATININE CLEARANCE

The creatinine clearance, like the urea clearance, has been extensively used for clinical purposes, particularly in Scandinavia, where it has been popularised by Rehberg.[11] As has already been pointed out, its estimate of the renal efficiency agrees well with that of the urea clearance. Thus since the *information which it gives is essentially the same as* the urea clearance, no special advantage is gained by its use. It is of value for confirming the information yielded by the urea clearance when this is required. The fact that facilities for the estimation of urea are more readily available in this country than those for the accurate estimation of creatinine gives the urea test a decided advantage, which is further increased by the considerably greater expense of the creatinine clearance test.

It is claimed by Rehberg that this test provides a measure of the volume of fluid filtered through the glomeruli, but there is no reliable evidence that this is so, and any conclusions based on such an assumption are unjustifiable.

The excretion of creatinine is apparently not affected to nearly the same extent as is urea by restriction of the volume of urine. It is possible, therefore, that in cases in which no diuresis can be produced the creatinine clearance may be more useful than the urea clearance.

OTHER CLEARANCE TESTS

The remaining function tests of this group are harder to perform, mainly because of difficulties of analysis, and are therefore unlikely to be very helpful for routine clinical purposes.

The pentose sugar *xylose* when taken in sufficient quantity by mouth appears in the blood in a concentration high enough for accurate analysis and is excreted rapidly in the urine. During its excretion a value for the xylose clearance can be obtained in the usual way. There is indirect evidence that the excretion rate of this substance also is directly proportional to the blood concentration. Hence, as with urea and creatinine, the value obtained for the clearance—i.e., the estimate of renal efficiency—is independent of the actual blood concentration of the substance. It has recently been found that the xylose clearance also agrees with the urea and creatinine clearances in its estimate of renal damage in nephritics.[8]

It is highly probable that the same will be shown to be true of cane sugar or *sucrose*. Owing to its decomposition by the digestive juices of the alimentary canal, this sugar must be introduced into the blood stream either directly or by subcutaneous injection. When this is done the sugar is excreted rapidly in the urine and a sucrose clearance can be determined. In normal animals[12] and in healthy human beings[13] the sucrose clearance agrees so closely with the xylose clearance that they are claimed by some workers to be identical. Sucrose also has been shown in rabbits at least, to be excreted at a rate proportional to its blood concentration.[7]

There remains one other clearance test which belongs to this group, and this concerns *glucose*. Injection of the drug phloridzin causes glucose to appear in the urine, producing the well known phloridzin diabetes. Increasing doses of this drug cause increasing glycosuria up to a maximum rate of excretion above which no further increase occurs. In this condition of full phloridzinisation a comparison of the rate of glucose excretion with the blood sugar gives a figure for the glucose clearance. This glucose clearance is found to be identical, *within the limits* of experimental error (2 or 3 per cent.), with the sucrose and xylose clearances. This identity has been shown in dogs,[12] in rabbits,[7] and in human beings,[13] but so far no observations have been reported in the nephritic subject.

RELIABILITY OF CLEARANCE TESTS

The fact that clearance tests can be carried out with a number of different substances, and that the estimates of renal efficiency they provide are in much closer agreement one with another than are estimates obtained with any other pair of function tests, is strong evidence that a real estimate of at any rate one of the partial functions of the kidney is being *made*.

The substances concerned in these tests all appear to be treated in the body as pure waste products requiring immediate excretion. (In phloridzin diabetes glucose also is certainly excreted as though it were a foreign substance not required by the body, and the organism suffers in consequence.) The clearance tests constituting this group are thus measuring the efficiency of the kidney in eliminating waste products. The body, having no further interest in these substances, exerts no specific control over individual ones, although it can probably control the rate of excretion of the group as a whole by influencing the general secretory activity of the kidney. In this respect the members of the group differ markedly from many other substances.

There can be little doubt that the excretion of water, of chloride, or of phosphate, for instance, is subject to controlling influences of whose precise nature we are still ignorant. With these substances therefore it is difficult to detect any clear relation between the rate of excretion and the blood concentration or anything else, and we are not in a position to say that their abnormal excretion is referable solely to abnormality of the kidney; the fault may lie in the controlling influences exerted by other organs. In the existence of such extrarenal influences we have plenty of reason to believe, but there is no reason to suspect that they have more than a minor effect on the excretion of urea, creatinine, or the foreign sugars referred to.

We have an instance of the effect of such undetermined factors in the case of glucose excretion. In the patient with diabetes mellitus the relation between the blood sugar concentration and rate of glucose excretion is a [illegible] complex one which is not yet fully understood But in the fully phloridzinised subject it is relatively simple, and of the type which characterises other members of the group In the former case we have to contend with complicating factors which may or may not be referable to the kidney directly In the latter, such uncontrollable variables are inhibited by the drug phloridzin, and glucose becomes subject to the same laws of excretion as are found with other members of the group

This same complexity of phenomena is found in the excretion of many other substances The water and chloride retention encountered in the hydræmic types of nephritis, for instance, is not necessarily attributable to the kidney, but may be due to the fact that the œdematous tissues in some way prevent the water and chloride from being made accessible for excretion. In such nephritics it is not infrequently possible to show that the ability to excrete urea and creatinine is still unimpaired If in such a case a water excretion test reveals an impaired excretion, it is not at present justifiable to interpret this as evidence of impaired renal function

Considerations such as these raise the question of how far we are justified in accepting the results of many other renal function tests as a definite measure of renal damage Much more evidence than is at present available must be obtained before we can safely do so I do not for one moment suggest that many of these tests are not of great value in clinical practice when employed in the light of empirical experience. They are frequently excellent *qualitative* indicators of renal damage, but so far as I am aware the clearance tests are the only ones which can at present make any claim to be at all *quantitative* And the reason that they can be made quantitative is that they deal with substances whose excretion is not controlled to any great extent by other factors than the blood concentration.

RELATION TO BLOOD-UREA

I have pointed out that this group of function tests appears definitely to estimate the excretory efficiency of the kidney for a variety of waste products It is generally accepted that this is the function of the kidney concerning which information is most valuable in the investigation of nephritis. It is failure of this function which brings about retention in the blood of urea and other metabolites Estimations of these substances, especially urea, in the blood are widely used to provide an index of he intensity of renal damage in cases of relative advanced nephritis For this purpose they cannot be entirely satisfactory In the first place the blood-urea concentration is determined not only by the excretory power of the kidney, but also by the rate of formation of urea in the body. Because of this, wide variations in the blood-urea of a nephritic can easily be brought about simply by changing the amount of protein in the diet Furthermore, since the kidney has a reserve excretory power which is normally only called into play during periods of stress, this reserve can be drawn upon to compensate for the damage caused by a nephritic lesion And because of this urea-retention does not begin until all available reserves of power have been called up This has been very prettily demonstrated by Van Slyke, who showed that the efficiency of the kidney, as judged by the urea clearance, may be reduced to half the normal, or even lower before any rise of the blood-urea or the blood creatinine above normal limits is detectable [3]

The urea clearance is thus a very much more sensitive test than the blood-urea alone.

CONCLUSION

The blood-urea has already proved its value as a routine test in clinical work, but I suggest that the urea-clearance test is likely to prove even more useful. It may be freely admitted that the renal function test most helpful to the individual clinician is as a rule the one in whose interpretation he has most experience. Experience of the urea-clearance test in this country is as yet relatively small, but there is strong reason for believing that its interpretation is much simpler than that of those at present in use, and that when it is better known it will be of more real value than any other test which we have Apart from its greater simplicity of interpretation, it has the advantage that it is estimating something definite and something referable to the kidney itself.

SUMMARY

The essential for any renal function test is that it should reliably estimate the function with which it deals, and for the great majority of such tests there is no evidence that they fulfil this requirement There is, however, a group of tests, of which the urea-clearance test is the most important, which agree with each other in their estimates of renal damage; and their agreement constitutes strong evidence that the renal efficiency in eliminating waste products is being reliably indicated by them. The urea-clearance test belongs to this group only when the clearance is measured during diuresis and with a raised blood-urea. For reliable results therefore these conditions should be observed The urea clearance is then a much more sensitive indicator of renal function than the blood-urea alone Indeed it appears to be the most rational one which we at present possess.

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A CASE OF SIMMONDS'S SYNDROME

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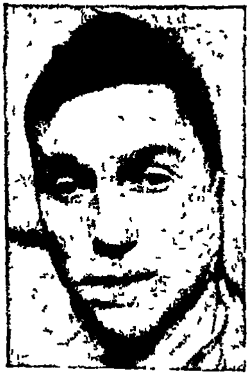
IN 1914 Simmonds described the syndrome th goes by his name · the manifestation of deficien of the anterior lobe of the pituitary body Many cas of it have since been described, chiefly in the co tinental literature, and there have been reviews Graubner and Silver, as well as good text-boo accounts by Falta and Berblinger The followi case is reported because the manner in which th pituitary was damaged is possibly unique, an because the correlation between the clinical and pathological findings is unusually complete

CLINICAL DESCRIPTION

History—The patient was a hospital waiter, aged 50, and his illness began suddenly 16 weeks before his admission to hospital He was married and had had two children

Thirty years previously he had suffered an injury to his nose which had been blocked ever since His complexion had always been pale, and the skin of his hands but not elsewhere, had always been dry For four or five years he had noticed difficulty in reading print with his left eye For three months before the illness began he put on weight rapidly, about 1½ st During all this time he was sexually potent Venereal disease was denied



Photograph of the patient

One night he felt as if he were developing a cold and took a "toddy" on going to bed Next morning while waiting at table he suddenly felt dizzy weak, and ill and vomited a little He was examined by a casualty officer who found no fever and no abnormal signs and sent him home He walked home, then collapsed and was put to bed For three days he was 'semi conscious too weak to give any attention to his surroundings The panel doctor attending him found that his temperature was 103° F After three days he vomited, then began to recover, but found that he had lost the sight of his left eye He had no pain no rigor no sweating, no paralysis, and no abnormal thirst, either at this time or later

After three weeks in bed he got up, but the same day he felt worse again shivered and could not get warm, and went to bed for another two or three weeks He complained only of loss of appetite and weakness Nine weeks after the onset he came to the out patient department complaining of weakness, headache, and breathlessness on exertion Routine examination showed nothing abnormal except pallor, a small volume pulse and impaired vision of the left eye (visual acuity, corrected R 6/9, L, 6/60) Fourteen weeks after the onset he attempted to work again but was too weak to do so Sixteen weeks after the onset he was admitted to hospital, having lost in that time approximately all the weight he had gained in the previous three months

CLINICAL EXAMINATION

On admission he was found to be a slightly wasted, normally proportioned man (height, 5 ft 4 in, weight, 8 st 5 lb, standard weight 9 st 12 lb) His intelligence was moderate, speech comprehension and movement were slow, but his mentality was otherwise normal The voice was thick from nasal obstruction

The skin of the face and ears was pale, sallow very dry, and somewhat wrinkled with a desquamation of fine dry scales The tip of the nose was quite smooth and waxy (see Figure). The skin elsewhere was pale and dry without wrinkling or desquamation There was no pigmentation of skin or mucous membranes The hair was dark and abundant on the head, the eyebrows and the legs scanty on the chin very scanty in the right axilla, and absent in the left, long and scanty in the pubic region and practically absent above the mons The nails were normal

There was no jaundice cyanosis, clubbing, or œdema, and no palpable lymph glands The tongue was large, clean, and rather smooth Some teeth were missing and there was a moderate degree of gingivitis and pyorrhœa The tonsils were just visible and clean There were no abnormal signs in chest and abdomen, except that the heart sounds were faint The blood pressure, measured with a mercury-column instrument, was 105/80 mm Hg

Penis and scrotum were rather small The right testicle lay at the lower end of the inguinal canal, the left in the scrotum, testicular sensation was present but subnormal

The patient had lost the sensation of smell The left eye was almost blind The pupils were equal and circular contracting with accommodation, and on illumination of the right retina but not of the left Both eyeballs were slightly sunken, their movements were normal with no nystagmus The right ear was slightly deaf, hearing by bone conduction better than by air conduction No other abnormality was found in the nervous system

The urine was normal The measured daily fluid intake was 670–1220 c cm, output 620–1145 c cm

SPECIAL EXAMINATIONS

Eyes (Mr Charles Goulden)—The left retina showed a macular choroiditis and almost complete (secondary) optic atrophy, visual acuity was reduced to the bare perception of light and dark The right retina showed evidence of old retinitis, with slight optic atrophy, visual acuity was slightly less than 6/6 and there was a defect in the upper and outer part of the visual field identical for 1/330 and 10/330, and corresponding to the chief area of old retinitis

Nose (Mr Norman Patterson)—The septum was deflected to the right there were polypi in the left ethmoid region, and dry muco pus in the left side of the nose

X ray examination (Dr M H Jupe)—The sella turcica was definitely enlarged, only one posterior clinoid process was visible and it was very thin There was a slight loss of translucency in the right middle ethmoid cells The chest and the stomach (barium) were normal

LABORATORY EXAMINATIONS

Wassermann reaction negative

Blood count red cells, 5,600,000, hæmoglobin (Dare) 78 per cent, white cells, 6800 (54 per cent polymorphonuclears 2 per cent eosinophils, 28 per cent small lymphocytes, 12 per cent large lymphocytes, 4 per cent large hyalines)

Cerebro-spinal fluid 12 white cells mostly lymphocytes, per c mm, 0·05 per cent protein; Wassermann reaction negative

Blood-sugar (Folin Wu) during a day on normal diet (grammes per 100 c cm) 10 20 A M, 0·077, 11 40 A M, 0·087 1 30 P M, 0·084, 4 P M, 0·085

The sugar tolerance was as follows —

Fasting blood sugar	0·067%	0·067%
Glucose by mouth	50 g	100 g
B S after ½ hour	0·069%	0·09[illegible]%
B S after 1 hour	0·071%	0·090%
B S after 2 hours	0·095%	0·080%

Basal metabolic rate (Douglas bag method): + 12, + 6

PROGRESS

For the first three weeks in hospital the patient's condition remained stationary, with temperature (axillary) 96°–97° F, pulse rate 60 80 and blood pressure between 95/75 and 85/65 mm Hg Then he had a short attack of sore throat (ward infection) with fever which occasioned the labial herpes seen in the photograph From this time onwards he was given 20 g glucose in orange juice four hourly

For the next five weeks he received thyroid extract gr. 3 daily His condition showed no change In the ninth week he grew weaker vomited once every 24 hours and complained of pain in the right shoulder His temperature rose to 99° and he had a cough with purulent sputum There was temporary improvement until the eleventh week when vomiting, [illegible] pyrexia and great weakness recurred He became somewhat [illegible] His blood pressure fell to [illegible] Latterly [illegible] renal cortex (Allen and Hanburys), 5 c cm. daily by subcutaneous injection, was then given for two weeks, at the end of which time the symptoms gradually improved, though the blood pressure continued to fall and reached 70/48 mm.

Thereafter there was a slow but definite all-round improvement, with a rise of blood pressure to 90/60 mm. In the sixteenth week he was able to get up, and in the twentieth week he was sent to a convalescent home Lumbar puncture about this time yielded a clear fluid with 2 lymphocytes per c mm. and 0·07 per cent protein His weight fell from 8 st 5 lb. on admission to 7 st 5 lb at the fifteenth week, and had risen to 7 st. 8 lb when he was discharged.

PATHOLOGICAL EXAMINATION

Five weeks later, or 41 weeks after the onset of the illness, he died in his sleep.

Summary of necropsy (*P M.* 319, 1932) *Œdema of larynx. Pituitary cachexia* (*Simmonds's syndrome*) *Destruction of pituitary body and included adenoma by hæmorrhage, necrosis, and fibrosis*

Great œdema of larynx Œdema of mucosa of trachea Subacute inflammatory infiltration of larynx, trachea, and bronchi. Recent hæmorrhage into mucosa of trachea and bronchi. Focal acute hæmorrhagico-purulent pneumonia Œdema of lungs, especially of right Fibrous pleural adhesions over postero-inferior border of upper lobe of right lung Thin clear pleural effusions (74 c.cm right, 89 c cm left) Severe brown atrophy of heart Moderate general atheroma. Œdema of slightly atheromatous areas of intima of aorta. Slight calcification of media of aorta Brown atrophy and œdema of liver. Chronic inflammatory infiltration of portal systems in liver Slight œdema of spleen and kidneys. Chronic inflammation of tip of appendix. Œdema with slight pitting of ankles. Great atrophy of thyroid gland Abundant lipoid and a brown pigment zone in greatly atrophied cortex of suprarenal bodies Great atrophy of testicles. A few fibrous adhesions in right tunica vaginalis Thymus obscured by fatty tissue· No macroscopic abnormality in parathyroid glands and pancreas. Branchial diverticulum of trachea (1·5 by 0·8 cm) on posterior aspect of trachea in space between fifth and sixth rings. Meckel's diverticulum 212 cm. above cæcum Considerable phimosis without inflammation Faint operation scar in skin over right inguinal canal. A few teeth missing No macroscopic abnormality in bones. A considerably wasted man.

Weights —Body, 49·5 kg (height 1·6 m), heart, 212·6 g ; liver, 1042·5 g ; spleen, 163 g. ; kidneys, 248 g , brain, 1282·8 g , thyroid gland, 10·5 g ; suprarenal bodies, 3·5 g ; pancreas, 62·8 g. ; testes, 18·5 g

NAKED-EYE EXAMINATION OF CONTENTS OF SKULL

Delicate fibrous adhesions united the dorsal surface of the diaphragma sellæ with the centre of the ventral surface of the optic chiasm and the adjacent part of the left optic tract. The apex of a calcified conical projection (0·7 by 0·3 by 0·25 cm. high) occupied the centre of the diaphragm and was united by fibrous adhesions to the leptomeninges over the anterior communicating artery The left optic nerve was grey and flattened (transverse section 0·55 by 0·3 cm) The left border of the right optic nerve (transverse section 0·65 by 0·3 cm) was similarly altered The internal carotid arteries, circle of Willis, and main cerebral arteries appeared normal On the ventral surface of the left anterior cerebral artery, near the left border of the optic chiasm, lay an ill-defined firm nodule (0·4 by 0·25 by 0·2 cm.) of translucent grey and orange-brown tissue. There was gelatinous grey thickening of the surrounding leptomeninges and a thin zone of sub-pial orange staining affected the base of the brain immediately to the left of the optic chiasm. The brain appeared otherwise normal.

The sella turcica was slightly enlarged (2 cm. from side to side by 1·6 cm from before backwards by 0·8 cm. deep) The dorsum sellæ was thin and brittle. The pituitary stalk was greatly deviated to the right, the centre of the diaphragma sellæ being occupied by the calcified projection already mentioned After removal and hardening in 4 per cent formaldehyde the complete contents of the sella turcica, weighing 1·45 g., were divided sagittally into five portions of about equal thickness. With the exception of a sharply defined, central opaque yellowish brown area (0·8 by 0·5 by about 0·6 cm. from side to side), the mass appeared to be entirely composed of tough grey gelatinous fibrous tissue, profusely flecked and streaked with orange or orange-brown pigment No trace of tissue resembling the anterior or posterior lobes of the pituitary body could be detected with the naked eye.

MICROSCOPIC EXAMINATION

The five portions of the pituitary mass were embedded in paraffin and examined by serial section A block from the base of the brain including the optic chiasm, adjacent anterior cerebral arteries, and hypothalamus was similarly treated Sections at selected intervals were stained with hæmatoxylin and eosin, wherever further elucidation of the histology was required these were supplemented by preparations stained with Weigert's iron hæmatoxylin and van Gieson's mixture, Weigert's fuchselin and neutral red, and Mallory's acid-fuchsin aniline-blue The other tissues examined were embedded in paraffin and sections were stained with hæmatoxylin and eosin, Weigert's iron hæmatoxylin and van Gieson's mixture, and Weigert's fuchselin and neutral red. A portion of one testicle was cut on the freezing microtome and sections were stained with Scharlach R and hæmatoxylin

The pituitary mass.—The diaphragma sellæ is fused with the underlying tissue and contains, in its centre and left side, a thin layer of lamellar bone The ventral end of the pituitary stalk is embedded in fibrous tissue to the right of this area The pituitary mass consists of dense fibrous tissue in which lie groups of degenerated or necrosed cells. This fibrous tissue is sparsely infiltrated with small lymphocytes and eosinophil and neutrophil leucocytes A good many macrophages containing golden-brown pigment are scattered throughout it but are most conspicuous in a zone surrounding the central necrotic area described below. The pigment gives a positive Prussian-blue reaction. A few amorphous hæmatoxyphil particles, cholesterin-crystal spaces lined with foreign body giant cells, and diffuse areas of recent hæmorrhage are also present.

The sharply defined opaque area seen with the naked eye lies slightly to the right of the centre of the pituitary mass and appears under low powers of the microscope as an amorphous, eosinophil collection of debris. Under high powers, however, it is seen to be composed of dead cells, the outlines and arrangement of which are often extraordinarily well preserved. The nuclei are uniform in size and spherical. The cell bodies are in places polygonal, vary in diameter from 8μ to 12μ and are arranged in small acini In other places they are elongated or pyriform with a long axis of up to 17μ, and sit in single rows like palisades upon longitudinally cut trabeculæ, or radiate round such trabeculæ when cut transversely The spaces between the acini and the rows of cells are filled with eosinophil debris. In the fibrous tissue to the left of this necrotic area there are occasional minute islands of loosely arranged living cells in acini of irregular shape. The cells are of uniform appearance and resemble the smaller cells in the necrotic area. They are polygonal with small round deeply pyknotic nuclei and scanty non granular cytoplasm. These islands become ever larger and more numerous as the left border of the mass is approached and their nuclei here are less pyknotic.

Very few vestiges of tissue resembling normal pituitary anterior lobe are present. The largest is a crescent (up to 0·3 mm wide) of greatly atrophied cells, including chromophobe and both kinds of chromophil cells, also a few cubical cells forming tubules and suggesting pars intermedia. This crescent lies immediately to the left of the attachment of the stalk. Elsewhere an occasional shrunken acinus of chromophil and chromophobe cells is found in the fibrous tissue, especially in its deeper parts The posterior lobe is represented by a greatly compressed remnant just behind the crescentic area of anterior lobe cells. This is separated from the attachment of the stalk by fibrous tissue.

Optic chiasm and hypothalamus.—The upper end of the pituitary stalk appears normal The nodule of tissue overlying the left anterior cerebral artery is identical in appearance with the islands of living cells lying to the left of the necrotic area in the pituitary mass The cells infiltrate the meninges slightly and a few groups are found in the proximal end of the left Sylvian fissure Posteriorly the nodule curves round the lateral border of the artery and comes into contact with the base of the brain, but does not infiltrate it The periphery of the nodule is crowded with macrophages containing iron pigment These are also present in the borders of the adjacent brain and in the perivascular sheaths of the left side of the optic chiasm This part of the optic chiasm also shows a considerable loss of myelin in a Loyez preparation There is an increased number of astrocytes in the demyelinated areas In the left supra optic nucleus many macrophages containing iron are scattered amongst the neurones, which appear well preserved The right supra-optic and both paraventricular nuclei are unaltered There is slight chronic leptomeningitis and a little diffuse hæmorrhage around the left anterior cerebral artery Deep in the substance of the brain, near the anterior commissure, there is conspicuous siderosis of the walls of the vessels, especially on the left In the same area, on the left, are numerous rounded extracellular particles of about the size of a red corpuscle, or larger, which give a strong Prussian blue reaction

Suprarenal body—In a section taken through the thickest part of one gland the cortex is very narrow, measuring from 0 10 to 0 3 cm in depth Further, in this cortex the cells are abnormally sparse The pigmented cells are usually sharply defined, but are scanty There are also a few groups of sharply defined cells in the zona glomerulosa and zona fasciculata These cells are moderately vacuolated Elsewhere the cells are greatly vacuolated and individual cells can rarely be distinguished, their nuclei are usually pyknotic and are irregularly scattered in an abundant foamy matrix Many large areas of matrix contain no nuclei The medulla is relatively bulky, and contains closely packed cells of a great variety of sizes and shapes

Thyroid gland—The gland is so atrophied as to be hardly recognisable as thyroid The *inter* and *intra lobular* stroma is very abundant and dense, while the parenchyma is relatively very sparse It consists of small lobular groups of small acini in which the cells are in general very small The cells line the acini or fill them to a greater or less extent Under high powers of the microscope the cells are seen to vary considerably in size, and there are occasional examples with giant nuclei One or two cells with more abundant cytoplasm or small syncytial masses occasionally lie in the lumina Spheres of colloid are extremely few and small There are numerous large areas of lymphocytic infiltration

Testicles—The tubuli contorti are shrunken, and their lumina are reduced to narrow slits by a hyaline swelling of the collagenous basement membrane They are usually lined and filled with single rows of cells, occasionally with double or triple rows There is no trace of spermatogenesis, and the cells are loaded with isotropic fat In the interstitial tissue are cells containing anisotropic lipoid They are doubtless interstitial cells They lie singly or in small groups, but are an inconspicuous feature There is no fibrosis and no inflammatory infiltration in the relatively abundant, very delicate, interstitial tissue

Bones—The costal end of the fourth right rib and a portion of corticalis from the centre of the right femur were decalcified in Müller's fluid for four months followed by 0 5 per cent nitric acid in 4 per cent saline-formaldehyde In the rib the *corticalis* is thin and the trabeculæ are somewhat sparse In the corticalis of the right femur a few Haversian canals are replaced by Haversian spaces At one end of one such space there is active osteoclastic resorption The rib and femur therefore show slight osteoporosis, but are otherwise of normal structure

INTERPRETATION OF PATHOLOGICAL FINDINGS

The preservation of the cells in the central necrotic area of the fibrotic pituitary mass is sufficient to permit the identification of this area as an adenoma The cells have the size and arrangement that are commonly found in chromophobe adenomas of this gland This interpretation is supported macroscopically by the enlargement of the sella turcica and by the displacement of the pituitary stalk It is confirmed microscopically by the presence in the left side of the pituitary mass and in the leptomeninges round the left anterior cerebral artery of certain islands of living cells, which closely resemble areas of chromophobe adenoma These islands appear to be surviving portions of the tumour The dense fibrosis and abundance of macrophages containing iron pigment point to a hæmorrhage into the gland at a considerable period before necropsy, causing partial destruction of the adenoma and almost complete destruction of the pituitary gland proper The hæmorrhage extended, moreover, into the leptomeninges on the left, causing damage to the optic tract on that side Chromophobe adenomata are liable to be complicated by hæmorrhage, and the distribution of the grades of severity of the pathological changes suggests that the hæmorrhage actually arose within the sella turcica There was no evidence of a leaking aneurysm of any cerebral artery

The other ductless glands examined show atrophic changes, which resemble those usually reported in cases of pituitary cachexia (Simmonds's syndrome) and which are no doubt secondary to the destruction of the anterior lobe of the pituitary body The slight degree of osteoporosis found may be attributed to the patient's prolonged confinement in bed

COMMENT

The diagnosis of Simmonds's syndrome was entertained during the patient's life, post mortem examination established it and explained the main clinical features of the illness

The rapid gain in weight (1½ st in a few months) preceding the illness may have been associated with the development of the chromophobe adenoma of the anterior lobe of the pituitary body This is uncertain, however, for the somatic abnormalities accompanying the presence of chromophobe adenomata are inconstant, such a tumour measuring 1 2 by 1 2 by 1 0 cm has recently been found (P M 262, London Hospital, 1933) accidentally at necropsy in a normally developed subject

The acute onset of the illness was clearly brought about by a sudden hæmorrhage in or near the tumour Any hæmorrhage at the base of the brain can produce collapse, coma or semi-coma, vomiting, and headache It can also produce fever, usually of moderate degree, the only manifestation of this hæmorrhage that may have been due to its particular situation is the height of the fever (105°) The hæmorrhage abolished almost all the remaining function in the left optic nerve, itself already damaged as the result of an old choroido retinitis

The hæmorrhage and the resulting inflammatory reaction and fibrosis destroyed the main mass of the chromophobe adenoma, and practically the whole of the pituitary body For the remaining ten months of his life the patient suffered from the effects of pituitary deficiency, which in his case were moderate wasting, great general weakness a low blood pressure, a low level of blood-sugar, and attacks of vomiting and prostration These attacks and the hypotension were reminiscent of Addison's disease, and post mortem the secondary atrophy of the suprarenal was found to be pronounced, there was, however, no Addisonian pigmentation His basal metabolic rate, at least at the time when it was determined, does not seem to have been lowered although at death the thyroid was markedly atrophic.

The hypoglycæmia is interesting and well [illegible] lished. Blood-sugar changes have [illegible] mentioned in descriptions or case reports of Simmonds's syndrome Yet the finding of hypoglycæmia in pituitary deficiency is exactly complementary to the familiar hyperglycæmia often associated with chromophil adenoma (acromegaly), a variety of anterior pituitary excess Further, it is a close parallel to the experimental observation of Houssay and Biasotti that the raised blood-sugar of depancreatised dogs falls towards normal when their pituitary bodies are removed, and also to that of Corkill, Marks, and White that hypophysectomised rabbits often have a low blood-sugar and an increased sugar tolerance, and are abnormally sensitive to insulin. But suprarenal deficiency is also characterised by a lowered blood-sugar level, and there is pathological evidence of suprarenal deficiency in this case Whether the hypoglycæmia is a direct result of the pituitary defect, or an indirect effect depending on the secondary suprarenal atrophy, must therefore remain an open question.

SUMMARY

The clinical and pathological features of a case of Simmonds's syndrome (pituitary cachexia) are described The syndrome appeared after the destruction, by hæmorrhage, of the pituitary body and an included chromophobe adenoma of the anterior lobe

We wish to thank Prof H. M Turnbull for his help in the preparation of the pathological report

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A CASE OF SIMMONDS'S DISEASE

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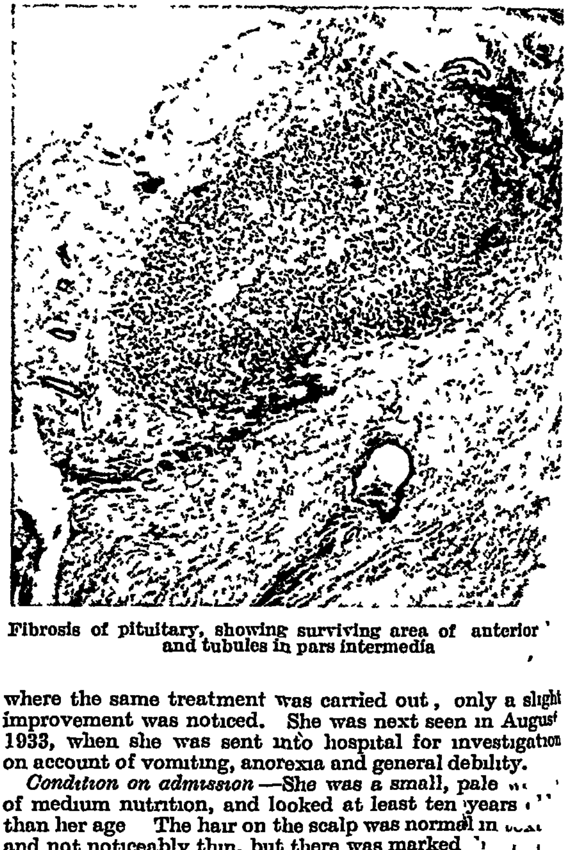
Since this condition was first described by Simmonds[1] of Hamburg in 1914 some 40 cases have been reported on the Continent and in America, but we have only been able to find one record from this country (Good and Newman[2]). It therefore appeared that a short note on a case would be of interest

CASE REPORT

History—The patient was a woman aged 41, the eldest of four, the rest of whom were healthy. She had always been pale, lacking in initiative and indifferent about personal cleanliness Her hair was curly At school she was backward and as a child she was considered to have rickets Menstruation began at 14 years and was quite normal The secondary sexual characteristics were well marked, but she always had a husky, toneless voice She was married at 28 and during the next eight years had six pregnancies: (1) mentally deficient (alive); (2) normal (alive), (3) stillborn, (4) miscarriage, (5) normal (alive), (6) died in infancy. The last delivery was abnormal, the patient having placenta prævia, which was followed by a febrile puerperium She was in hospital six weeks.

The last child was born five years ago and after that the patient never menstruated; apart from this there was no sudden change except that the relatives noticed that she had lost weight None of the children were ever breast-fed She had had no illnesses except complete dental extraction between fifth and sixth pregnancies for pyorrhœa

The patient was first seen in February, 1933, when she was sent to hospital as post-influenzal debility. She was pale and complained of weakness There were no definite signs or symptoms on which to form a diagnosis Certain points suggested mild hypothyroidism, and she was therefore given thyroid (dried extract) gr ¼ twice daily, iron and a full diet, and sent to a convalescent home where the same treatment was carried out, only a slight improvement was noticed. She was next seen in August 1933, when she was sent into hospital for investigation on account of vomiting, anorexia and general debility.



Fibrosis of pituitary, showing surviving area of anterior and tubules in pars intermedia

Condition on admission—She was a small, pale of medium nutrition, and looked at least ten years than her age The hair on the scalp was normal in and not noticeably thin, but there was marked of the axillary and pubic hair and eyebrows. The was of a lemon colour, but of soft texture The fa was wrinkled and she was edentulous The breasts very small Otherwise no abnormal signs could be fo The pulse was soft

Course of the case—Her condition remained ve much the same until a week before her death vomiting occurred in attacks and bore no relation food, it was more often in the morning She had peric of freedom She often complained of headache pains in the back She felt the cold. There was transient attack of œdema, more marked in the and lumbar region and not accompanied by any in subjective symptoms She was able to get up fo several hours each day, during which time she was willing helper in light ward duties On Nov 5th, 19 she said she felt unable to get up and lay huddled in bed-clothes On the 6th at 6 A M. she had a convul attack from which she recovered after administration adrenaline and a glucose drink On the 7th she a more prolonged attack which proved fatal

CLINICAL AND PATHOLOGICAL INVESTIGATIONS

The temperature was always subnormal Respirati and pulse-rate normal

Blood—The blood pressure was never above 90 luring the last ten days was between 80 and 85 The lood count showed no anæmia, but a leucopenia and elative lymphocytosis and some eosinophilia

	Aug 23rd, 1933	Oct 9th
Red cells	6,280,000	5,320 000
Hæmoglobin	96%	86%
Colour index	0 8	0 8
White cells	3,000	5,600
Polymorphs	42 5	30
Eosinophils	1 5	6
Lymphocytes	56 0	64

The blood urea was normal (44 mg per 100 c cm) The blood-sugar was not estimated

Gastro intestinal.—There was achlorhydria A barium meal showed no abnormality

Urine—Specific gravity 1020–1024 Volume normal Occasionally a trace of albumin, but no other abnormal onstituents were found The urea concentration was normal Microscopically there were a few red blood corpuscles and *Bacillus coli*

PATHOLOGICAL REPORT

Summary of necropsy (No 1738/1933) Simmonds's disease ibrosis of pituitary,—Atrophy of heart Moderate theroma of arteries Area (larger 2 × 1 2 cm) of sub leural fibrosis at apex of each lung Parathyroids small nd inconspicuous Thymus masked by fat Brown trophy of liver Engorgement of small spleen containing n excess of eosinophil leucocytes Atrophy of cortex f small kidneys (cortex 0 3 cm , medulla 0 8 cm deep) noderate ischæmic fibrosis, slight chronic pyelitis Edema of small pancreas Severe chronic appendicitis ibrosis of small ovaries (2 5 × 0 7 cm) Hair of head bundant, fine and soft, axillary and pubic hair absent To abnormality in distribution of fat An edentulous noderately nourished woman

The pituitary was adherent to the surrounding tissues measured 0 8 × 0 6 × 0 5 cm and on sagittal section howed a tough white cut surface with a greyish yellow entral area (0 25 × 0 1 cm) The thyroid was small s cut surface showed a few indistinct white strands in pale yellow ground The suprarenal bodies were small, e left measuring 2 6 × 2 0 × 0 6 cm , the right 3 8 × 9 × 0 7 cm , in both an abundant grey medulla was rrounded by a very thin (up to 0 1 cm thick) yellow rtex

Microscopical examination—Sections were taken of the tuitary, thyroid both suprarenals, ovary liver, spleen, dney, appendix, and apex of lung; they were fixed in per cent saline formaldehyde, embedded in paraffin, d stained with Ehrlich's hæmatoxylin and eosin and ith iron hæmatoxylin and van Gieson's mixture The er and one suprarenal were also stained with hæmatoxylin and Sudan III, and we are indebted to Dr A C ooke for a preparation of the pituitary stained by allory's acid fuchsin aniline blue method

On microscopical examination there is a dense fibrosis the whole contents of the pituitary fossa throughout e fibrosis there is a slight infiltration with lymphocytes d large mononuclears The anterior lobe is almost tirely represented by a small area of gland tissue e Figure) corresponding in position to the greyish llow area seen with the naked eye, the great majority the cells are chromophobe, there are a few basophil d a very few acidophil cells There are also a few all groups of chromophobe cells mainly situated in the rs intermedia, where there are also a few small cysts d tubules lined with cubical and flattened cells Of posterior lobe only a very small ill-defined area close the pars intermedia can be recognised

The thyroid shows a dense diffuse fibrosis and an ensive infiltration with lymphocytes, in addition to the ny lymphocytes scattered diffusely through the gland re are numerous close packed masses in some of which erm-centres' are present The acini are greatly uced in number and very small, only a very few contain oid

The cortex of the suprarenals is atrophied It is very row and is unusually clearly demarcated from the lulla The zona glomerulosa is distinct except in a few small areas in which the zona fasciculata appears to extend to the capsule, the cells of the zona glomerulosa contain an unusually large number of lipoid droplets The cells of the zonæ fasciculata and reticularis are loaded with lipoid, their outlines are for the most part distinct, but in places the cells have broken down to form small foamy areas, in these areas nuclei are fewer than else where, pigment cells are absent There is considerable degeneration of cell bodies in the medulla In the capsule of one suprarenal are two small cortical adenomata, whose cells show changes similar to those in the cortex proper

COMMENT

Silver[3] has reviewed the literature exhaustively, and from his study of 41 cases has drawn a well-defined picture of the clinical and pathological features of Simmonds's disease This case presents almost all of them There was an insidious onset, towards the end of a long series of pregnancies, of progressive weakness and debility, accompanied by amenorrhœa and loss of pubic and axillary hair, headache, vomiting, anorexia and a subnormal temperature were present At one time the symptoms suggested a mild degree of hypothyroidism At necropsy destruction by fibrosis of the anterior lobe of the pituitary was found, there was atrophy of the other endocrine glands and of the other organs

The most unusual feature of this case was the absence of obvious wasting, but the relatives stated that the patient had been losing weight she appeared older than her years, and the characteristic splanchnomicria was noted Moreover, cachexia has not invariably been present in the reported cases, Fahr[4] found it absent in his case and in two of Reye's[5] cases, in which the duration of the disease had been eight and three years respectively, no obvious wasting had occurred In the microscopical examination there were unusual findings in two organs the posterior lobe of the pituitary and the thyroid When the destruction of the anterior lobe of the pituitary is due to fibrosis the posterior almost always escapes, in this case however it is almost completely destroyed A similar condition was noted by Simmonds in his original case and by Thür[6] In the thyroid simple atrophy is the usual finding, fibrosis and lymphadenoid infiltration, found in this case, have been described by Thür,[6] Meng[7] and Pribrian,[8] and are present in Aitken and Russell's[9] case

Our thanks are due to Dr W R M Turtle for permission to use the clinical notes

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NATIONAL INSTITUTE FOR THE DEAF—The development of this institute since its reconstitution ten years ago has been so rapid that the committee have had to provide more commodious premises A fine freehold house 105 Gower-street London W C 1 has been secured and the work will shortly be transferred thereto from the present offices 2 Bloomsbury-street W C 1 The cost with alterations and furnishing will be about £12 000 and for this sum Lord Charnwood and his associates are now appealing to the public Some £2500 has so far been received It is pointed out that a permanent centre of information and advice on deafness and the deaf is a national necessity and that adequate accommodation is an essential for satisfactory service

ERYTHRÆMIA
WITH MIGRAINE, GOUT, AND INTRA-CARDIAC THROMBOSIS

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The term "polycythæmia rubra vera" is frequently used as if it were synonymous with erythræmia (splenomegalic, cryptogenic, or *apparently primary,* polycythæmia, of the Vaquez-Osler type), but strictly speaking it must include all cases of polycythæmia rubra in which the erythrocyte count per cubic millimetre of blood is increased, provided that the total blood volume is not decreased (as it would be if the blood were inspissated, for instance, owing to diarrhœa). Clearly, therefore, the term "polycythæmia rubra vera" logically must include the secondary polycythæmia (or erythrocytosis) often present in cases of congenital cardiac malformation—which cannot rightly be called erythræmia. Accordingly, in the heading of the present paper, I have kept to the term "erythræmia" instead of speaking of "polycythæmia vera," though the latter term is very frequently employed as a synonym both in English and foreign literature.

HISTORY OF THE CASE UP TO DECEMBER, 1932

I demonstrated the patient at the clinical section of the Royal Society of Medicine[1] on Dec 9th, 1932, and following is a summary of my notes up to that date :—

The patient, aged 43 years, is a somewhat thin man of typical erythræmic appearance, with considerable enlargement of the spleen Liver not felt No enlargement of superficial lymph glands. Since 1922 he has had frequent short attacks, apparently of the nature of ophthalmic migraine, which he says are often associated with transient diplopia; sometimes there have been luminous phenomena, at times he has had giddiness Since 1929 he has suffered from repeated gouty arthritis in various joints and has had a few small tophaceous nodules, from one of which sodium urate crystals were obtained in July, 1932 No evidence of erythræmia in other members of the family.

In July, 1932, he returned to England from New Zealand with careful notes of his case by Dr J Roberts Boyd and Dr. W J Hope-Robertson, of Wellington, who had diagnosed the condition On reaching England the spleen could be felt three fingers-breadth below the costal margin , liver not obviously enlarged Superficial lymph glands not enlarged. Blood count hæmoglobin, 132 per cent , erythrocytes, 9,500,000 , colour-index, 0·6 ; leucocytes, 14,900 (metamyelocytes, 1 per cent ; polymorphonuclear neutrophils, 78 per cent ; lymphocytes, 16 per cent ; monocytes, 5 per cent) ; no nucleated or other abnormal red cells seen The urine showed nothing abnormal excepting a slight excess of urobilinogen and a little indican Brachial blood pressure : 110/80 mm Hg. Blood-urea, 48·6 mg per 100 c cm ; blood-serum calcium, 10·1 mg ; blood-serum cholesterol, 161 mg Negative Wassermann and Meinicke reactions Fractional examination gave normal hydrochloric acid values in the gastric contents

Since then the erythræmic condition has not varied much, and has not been beneficially affected by phenylhydrazine treatment Patient recently had a prolonged syncopal attack lasting two and a half days, such as would suggest an attack of coronary thrombosis, though typical pain was absent.

SUBSEQUENT HISTORY

The patient remained in the hospital till August, 1933. During this time he often suffered from severe pain (sometimes "catching" with inspiration) in the region of the spleen The spleen became greatly enlarged and formed a rounded, clearly defined, bulging mass, reaching considerably to the right of the middle line and downwards to below the umbilicus. Thrombotic infarction was thought of with perisplenitic adhesions Local belladonna plasters seemed somewhat to relieve the pain. The liver was not definitely felt Cardiac palpitation occurred sometimes The urine contained a little albumin and a few hyaline and granular tube casts. Uric acid in the blood : 5 mg per 100 c cm. The treatment was by occasional small bleedings Constipation was troublesome and there was considerable loss of body-weight (Weight on June 18th, 1933, was 54·7 kg against 66·7 kg on July 25th) There was a tendency at times to vomit—whether connected or not with migraine A trial, of intramuscular injections of a splenic extract and a trial of a high fat diet (see Rothmann[2]) gave no decided result , the patient disliked the excess of fat Colchicum had a good effect on the gout In August, 1933, shortly before leaving the hospital, his blood count gave : hæmoglobin, 110 per cent ; erythrocytes, 5,900,000 , leucocytes, 25,150 The relatively high leucocyte count (often taken) was very striking

On Feb. 4th, 1934, the patient was seen in the out patient department, apparently much better, and having remained almost free from gout. He complained of weakness in the legs. Occasionally he had noticed quite transient diplopia Body-weight : 68·6 kg Spleen and liver not felt. Brachial blood pressure (higher) 130/95 mm Hg. Heart : nothing special Urine specific gravity 1017 , acid , albumin present (a "cloud"), no sugar ; a few hyaline tube casts Blood count hæmoglobin, 105 per cent ; erythrocytes, 6,640,000, leucocytes, 27,650 (eosinophils, 5 per cent , polymorphonuclear neutrophils, 76 per cent. , lymphocytes, 15 per cent. ; monocytes, 4 per cent). Moderately erythræmic appearance

On April 11th the patient again came up to show himself, weighing more (73·1 kg) and saying that he had been taking more fat in his diet Spleen not felt, but apparently somewhat enlarged by percussion note Heart nothing special. Urine : more albumin (5 per mille by Esbach's tube), but microscopically nothing abnormal Brachial blood pressure : 135 85 mm Hg. Blood count : hæmoglobin, 117 per cent. , erythrocytes, 8,200,000 , leucocytes, 32,800 Uric acid in blood : 5·84 mg per 100 c cm He said he had felt weak in the legs and had lately had some epistaxis and a slight tendency to oozing of blood from the gums He had recently had an "attack" of about ten minutes' duration, with roaring sound in left ear, slight vertigo and slight diplopia letting : 200 c cm

The patient was *readmitted* on May 10th, 1934, in very feeble condition, having had tar-like fæces for the last week. He had for a longer time had burning se and a tendency to belching about two hours after meals A blood count on the preceding day had given globin, 73 per cent ; erythrocytes, 5,600,000 , leucocytes 32,700 (eosinophils, 8 per cent , myelocytes, 2 per cent polymorphonuclear neutrophils, 74 per cent ; lymphocytes, 13 per cent , monocytes, 3 per cent), cytes, 700,000 per c cm of blood, including many "giant forms , no poikilocytosis, anisocytosis, or polychro Duodenal ulcer was considered probable, and he treated accordingly, but the fæces continued to con blood, and on May 14th the blood count gave . hæm globin, 32 per cent ; erythrocytes, 2,840,000 , colo index, 0·56 Urine (May 11th) free from albu and sugar and tube casts On May 15th the was unconscious, and in spite of a blood trans (350 c cm) he died in the evening of that day.

NECROPSY AND MICROSCOPIC EXAMINATION

There was no ulceration of the duodenum, stomach, oesophagus, but the source of the hæmorrhage must ha been a greatly congested segment of the ileum, about 20 in length, not far from the ileo-cæcal valve, the congestio being apparently due to thrombotic or embolic infarction there was no actual gangrene The heart (400 g) contained some ante-mortem white adherent thrombus in the le ventricle at the apex and under the mitral valve Microscopical examination showed a little small-cell infiltration and degeneration of the subendocardial apical myocardium, over which there was thrombus in process organisation Otherwise the heart and aorta showe nothing special The spleen (650 g) was enlarged, puckered, and scarred (from old thrombotic infarction) and was fixed to surrounding parts, especially the stomach, by perisplenitic adhesions There was old thrombotic occlusion of the trunk of the splenic artery The splenic substance was of a brownish red colour, and microscopically showed fibrosis, a good deal of brown pigment (hæmosiderin) and relatively scanty lymph follicles The liver (2375 g) was large, and showed moderate centro-acinous changes, apparently due to passive congestion. The skull was not opened, the other viscera showed nothing special by naked eye examination

The bone marrow, examined in the central portion of the shaft of the left femur, was partly fatty, but mainly red Microscopically this red bone marrow was found to contain only scattered fat vesicles, but to consist chiefly of neutrophil and eosinophil myelocytes (more of the former in most parts of the field) and nucleated red cells (mainly normoblasts) together with an *abundant* sprinkling of large megakaryocytes

REMARKS

In regard to the source of the intestinal hæmorrhage in this case it was natural during life to think of duodenal ulceration as this is a recognised complication of erythræmia I might refer, for instance, to a recent paper by W Boyd,[3] who relates the case of a man, aged 37 years, with polycythæmia, coronary thrombosis, and duodenal ulceration It seems that in such cases the polycythæmia really bears a causal relationship to the duodenal ulceration But intestinal hæmorrhage may also be due to infarction of a segment of small intestine as in the present case

Whether in the present case the terminal intestinal lesion was due to embolism from the thrombus in the left ventricle or to spontaneous mesenteric thrombosis I am not sure, but there can be little doubt that the splenic infarction was thrombotic The time of the splenic infarction corresponded probably to that of the great bulging swelling of the spleen and the troublesome pain in the splenic region, which were striking features in the clinical history of the case

Gout is a well known occasional complication of erythræmia I have myself observed this association several times, and I think that it is quite possible that the earliest record of erythræmia will be discovered amongst old descriptions of gouty cases There can be no doubt that (like the tendency to urinary lithiasis in some leukæmic and erythræmic cases) the association of gout with erythræmia is due to excessive nuclein catabolism resulting from the destruction or breaking up of the nuclei of the abundant erythroblastic and granulocytic elements In the later stage of the present case, as in most "full blown" erythræmic cases, the leucocyte count became relatively more increased than the erythrocyte count

The abundance of the megakaryocytes in the bone marrow may, of course be correlated with the high thrombocyte count in the blood a few days before death

The association of migraine with erythræmia was especially studied by Koester (1906) in his case,[4] and there may well be a causal relationship between the two (in my case the gout may have been a causal link) though this association seems to be hardly frequent enough to support such a suggestion

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TRIGONAL LOOP-TRACTION IN SUPRAPUBIC PROSTATECTOMY

A NEW TECHNIQUE

By Norman Lumb, O B E, M S Lond, F R C S Eng

HON ASSISTANT SURGEON AND SURGEON IN CHARGE OF THE UROLOGICAL DEPARTMENT ROYAL PORTSMOUTH HOSPITAL, CONSULTING UROLOGIST, GOSPORT WAR MEMORIAL HOSPITAL

THE results of suprapubic prostatectomy have been considerably improved in recent years by modifications in technique Thomson-Walker's open operation led to better control of hæmorrhage, and Harris's plastic method has helped to diminish sepsis Considerable difficulty has, however, been encountered in so placing Harris's posterior suture that it ensures a firm hold pending union between the edges of trigone and urethra I have evolved a new technique which successfully overcomes this difficulty and can be carried out in every case A flap of trigonal tissue is drawn down into the prostatic cavity and retained in position by means of a silk traction loop traversing the urethra Healing quickly takes place by granulation, and the objective of the Harris operation is achieved without the uncertainty occasioned by a suture which may fail to hold

TECHNIQUE OF THE OPERATION

A gum-elastic coudé catheter having two eyes is threaded with two moderately stout silk threads about 18 in long, so arranged that 3 in of each project from the eye The catheter is well lubricated, passed into the bladder, and the distending fluid injected A wooden spigot closes the catheter and a sterile towel is arranged upon which the outer ends of the silk threads rest alongside the catheter A small artery forceps is attached to one thread and a larger pair to the other, so that they may be distinguished subsequently, or silk threads of different colour may be used

A midline incision is preferred though a transverse one may equally well be adopted, and the peritoneum gently displaced upwards exposing the bladder which is opened at its highest point A small puncture is made in the bladder wall and a suction tube used to evacuate the contents Great care is taken to avoid opening up the cellular tissue in front of the bladder Two sling stitches are inserted and the opening enlarged upwards until two fingers can be accommodated

The bladder ends of the two silk threads are unthreaded from the eye of the catheter, a small and large forceps placed on them, and the catheter withdrawn Two separate silk threads thus traverse the urethra from meatus to bladder The prostate is enucleated manually as expeditiously as possible, and time is not expended in attempting to detach every nodule of gland tissue at this stage, for with the excellent exposure of the prostatic cavity subsequently afforded all can then be removed in full view Dry gauze from a 3 in roll is lightly packed into the cavity to check hæmorrhage, whilst the gloves are changed and the patient is slightly tilted towards the Trendelenburg position A self retaining retractor of Morson's pattern is inserted and the gauze [illegible] With a good top light or shadowless lamp no [illegible] illumination may be required, but in case of [illegible] the bladder may be brilliantly lit by means of [illegible] attached to the three retractor blades [illegible] apparatus is now turned on and serves to [illegible] field clear The centre bar of the middle blade of the retractor is made tubular to act as a sucker, and [illegible] sufficiently to keep the rim of the [illegible] any way impairing the view All [illegible] into the cavity and as soon as [illegible] any pieces of prostatic tissue [illegible] The [illegible] at the rim are secured by [illegible] and the ends of the first two serve as tractors to facilitate the introduction of others. Constant suction, with the occasional use of a mounted swab, provides a perfectly clear field, and little difficulty is found in inserting the necessary stitches

The next step is the most important, for success or failure turns upon it. A fine silk suture, 18 in long, is passed through the trigone in the middle line, about ¼ in behind the raw edge, thus securing a firm hold upon it The ends of this suture are tied to the bladder end of one of the silk threads previously mentioned, and drawn through the urethra to the external meatus. When pulled tight a triangular flap of the trigone is seen to be drawn down, largely obliterating the posterior portion of the prostatic cavity and diminishing the bleeding The weight of the forceps attached to the silk thread will be found sufficient to keep the flap in position at this stage, and the indwelling catheter is next inserted A flute-ended indiarubber catheter, size 24, with two lateral openings, is used for this purpose After lubrication it is readily drawn into the bladder by means of the second silk thread, which is secured to its tip by transfixion. The silk thread is removed and a stout silkworm-gut stitch attached instead to the tip of the catheter, the ends being held in a forceps This is used later for suspending the catheter in its final position within the prostatic cavity.

At this stage bleeding is considerably diminished and the remainder of the plastic portion of the operation consists in inserting the one or more anterior obliterating stitches described by Harris These may be made more effective by using the infolding method described below, as they then tend to diminish pocketing in the anterior part of the cavity during healing A wide hold is taken with the boomerang needle-holder and the catgut stitch drawn through The two free ends are made to cross to opposite sides of the prostatic cavity, where each, threaded on a needle, picks up a portion of the rim, emerging once more into the bladder On tying the two ends infolding takes place and the edges are well inverted.

The catheter is now carefully adjusted so that its lower lateral eye lies just at the entrance to the torn posterior urethra, thus draining the prostatic cavity completely, and a small drainage-tube (¼ in) is placed in the bladder. Closure of the wound in the bladder is carried out in the usual way, with an inverting stitch, followed by a second layer of fine catgut The drainage-tube should lie at the upper end of the bladder incision and be firmly gripped, the silkworm-gut loop suspending the catheter emerging immediately below it. A tiny drainage-tube is placed in front of the bladder and, if all has gone well, the pre-vesical space is free from oozing and the bladder sinks to its normal position. One or two interrupted catgut stitches and one continuous stitch bring the muscles and sheath together. Particular care is taken to place one or more stitches through the muscle above the tube to strengthen this potential site of a hernia. The skin wound is closed with interrupted sutures. The suspending stitch for the catheter is passed through the skin margin on one side and tied The silk loop attached to the trigone is finally tightened, wrapped once or twice round the catheter, and tied securely. The catheter is syringed through until fluid is seen to run freely from the suprapubic tube, and then wrapped in a sterile dressing, so that continuous drainage is maintained

On recovery from the anæsthetic the patient is comfortably propped up in bed The catheter is connected to a length of rubber tubing draining into a receiver at the side of the bed About 2 oz of silver nitrate solution, 1 in 2000, are slowly injected at the end of two hours, and then every four hours during the first 24 hours. Thereafter morning and evening injections only are required.

A certain amount of urine drains into the dressings for the first day or two Vomiting, straining, and coughing all increase this during the stage of recovery from the anæsthetic, and the small suprapubic tube acts as a most valuable safety-valve Both tubes are usually removed on the fourth or fifth morning, the state of the urine being the deciding factor. The catheter then copes with the greater part of the drainage, and morning and evening dressings are sufficient to keep the patient dry and comfortable The Hamilton-Irving box is not required, and the absence of pressure on the wound saves the patient much discomfort, while far greater freedom of movement is permissible in the early days of recovery The catheter is left for 10 to 12 days and then removed together with the trigonal traction stitch. The patient usually passes a little urine naturally after a few hours and some may leak through the suprapubic fistula for another day or two In the course of 48 hours micturition becomes freer, and the wound is usually dry about 14 days after operation.

TWO-STAGE OPERATION

One of the most gratifying features of this technique has been the success attending second-stage operations. At first sight it would seem that the contracted bladder and dense scar tissue surrounding the suprapubic fistula must render it impracticable This is not so, and although a much wider experience is necessary before final judgment can be passed it may be said that the method has not yet had to be abandoned in any case. An examination of several cases has been carried out with the McCarthy endoscope between the tenth and fourteenth post-operative days to determine the exact condition at the bladder neck following this procedure. Using water distension, the instrument (24 Ch) was readily passed into the bladder and, on withdrawal, the junction of bladder and posterior urethra identified with difficulty No raw area remained, the transition from bladder to urethra was smooth and uninterrupted, and sphincter-like contractions closing the lumen could be observed on interrupting the flow of irrigating fluid These findings were encouraging for post-operative stricture formation and loss of control have been suggested as likely sequelæ when reconstructive operations are carried out in this region. No evidence of these has been forthcoming and the method is put forward with confidence for an extended trial

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Clinical and Laboratory Notes

RUPTURE OF THE CÆCUM DUE TO ANNULAR CARCINOMA OF THE SIGMOID

By W. N. P. Wakeley, M B Lond.
LATE HOUSE SURGEON, KING'S COLLEGE HOSPITAL

I have found no record, since 1920, of rupture of the cæcum above a malignant stricture Certainly one or two cases of perforation have been reported but the perforation occurred in conjunction with appendicitis, and was merely due to gangrenous typhlitis I have been told by Mr A W. Kendall of one case of sigmoid carcinoma with perforation of the bowel on the right side of the abdomen, but the actual site was not confirmed at autopsy.

According to F. T. Van Beuren[1] rupture of the intestine secondary to prolonged over-distension is seen only in cases of mechanical ileus The theory is that perforation is due to necrosis of hæmorrhagic infarcts on the antimesenteric surface: the gut becomes distended above the obstruction, and the vessels in its wall are stretched, this causes obliteration of the veins, while the arteries continue to pulsate, extravasation and coagulation of blood occurs in the submucosa, and finally the pressure occludes the artery as well as the vein, and the area of tissue supplied by these vessels is thus deprived of circulating blood, with consequent necrosis The necrosis is evident first in the submucosa and inner muscular coats and later spreads to the other coats

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[1] Ann. of Surg., 1926, lxxxiii , 69.

A man 66 years of age was admitted to hospital complaining of "terrible pains inside, and constipation" Constipation had been noticed for some months and during the week before admission to hospital the bowels had been open only once Diarrhœa had never been experienced Colicky pains in the abdomen had been felt on and off for some weeks, but on the day before admission they had suddenly become agonising The patient had vomited six times during the last week, and had been much troubled by borborygmi He had never had appendicitis or jaundice The appetite had been fairly good, but he may have lost weight

The patient had a rather drawn face, and the tongue was furred but moist The pulse rate was 126 per minute, the temperature 100 4° F, and the respiration rate 24 There was enormous distension of the abdomen, it appeared to be symmetrical and mainly central, and there was a hyper resonant percussion note The abdomen was tense all over, but much tenderness and some rigidity was obvious in the right side of the abdomen especially below the umbilicus No visible peristalsis was seen, and nothing abnormal was detected on digital examination No external herniæ were present

After the clinical examination, which elicited obvious signs of a localised right-sided peritonitis together with intestinal obstruction, a tentative diagnosis of appendicitis complicated by paralytic ileus was made

At operation the abdomen was very distended even under the anæsthetic A right paramedian incision about 6 in long was used On opening the peritoneum a large amount of gas was liberated, and the abdomen visibly decreased in size while the gas escaped As the abdomen collapsed a quantity of brown fluid was seen in the peritoneal cavity The gut showed no signs of peritonitis except a loop of ileum adjacent to the cæcum which was bright red in colour and showed early acute inflammation The appendix was normal as were the stomach and duodenum also The cæcum was of the third or normal type of man (Treves) On its outer aspect it was covered with plastic lymph and was acutely inflamed There was a small perforation about the size of a pin's head in this inflamed area, and fæces were seen escaping from it The large bowel was then examined and an annular carcinoma of the sigmoid was found A cæcostomy through a soft rubber catheter incorporating the hole already in the cæcum was made The flank and pelvis were drained

The condition after operation was fair, and recovery gradual yet uneventful The cæcostomy commenced to work soon after operation On the eighteenth day after the first operation a second operation was performed The growth and adjacent gut was resected while continuity of the bowel was established by end to-end anastomosis Unfortunately the patient died on the following day from shock The growth was found to be a typical annular carcinoma causing almost complete obliteration of the lumen of the bowel

In the cases studied by Van Beuren the perforations were usually close to the seat of the obstruction and were on the antimesenteric border The cæcum usually, and certainly in this case, had no mesentery Also the perforation was at a distance from the obstruction However, the perforation occurred on the outer aspect of the cæcum where the anterior and posterior cæcal arteries anastomose; this situation being equivalent to an antimesenteric border as far as blood-supply is concerned Also the cæcum is the thinnest and most dilated portion of the large bowel Thus the mechanism of gut distension—stretching of vessels their subsequent obliteration by pressure, and ultimate necrosis of the bowel wall—probably holds good in this case Certainly the appearance of the perforation suggests that it does

Annular carcinoma of the colon is by no means rare, yet perforation after obstruction is fortunately uncommon, perhaps surprisingly so in view of the fact that the functions of the bowel in these cases are frequently unimpaired and symptoms are not obvious until the lumen is almost obliterated In the case here recorded a good deal of the distension was due to the development of gases from the fæcal material pent up in the large bowel This was shown by the large amount of gas liberated on opening the peritoneal cavity

My thanks are due to Mr Yates Bell for permission to publish this case.

DARK BLUE VOMIT DURING IODIDE THERAPY

BY G C LANDER, M D M R C.P Lond

ASSISTANT IN PATHOLOGICAL CHEMISTRY, UNIVERSITY OF CAPETOWN

A COLOURED man was admitted to the New Somerset Hospital, Capetown, with a severe attack of vomiting The vomit was turbid and of a dark blue colour with a slight pinkish tinge The circumstances suggested that he might have been poisoned The following investigation revealed the nature of the pigment

By filtering it was found that the pigment was not in solution, the filtrate was perfectly clear and colourless On standing exposed to light the colour faded, but it was restored by a trace of bleaching-powder or of nitric acid, excess of bleaching-powder decolorised it On shaking with chloroform the chloroform became pink, but the pigment remained in the watery phase, addition of a drop of thiosulphate decolorised both chloroform and vomit Microscopical examination showed numerous granules which became deeply pigmented on addition of iodine or by the addition of bleaching powder without iodine

The conclusion was that the colour was due to a trace of iodine reacting with the starch of the last meal Further inquiry elicited the fact that the man was *under treatment for syphilis* and was taking iodides The oxidising agent which led to the presence of a trace of *free iodine* in the stomach was *not* identified

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PAYING PATIENTS AT GUY'S HOSPITAL.—Fifty years ago Guy's Hospital opened the first ward for private paying patients to be instituted in a general hospital At first it contained 12 cubicles, to-day *30 cubicles and one* private room are available for private *patients On Oct 3rd the* foundation-stone of a new paying patients' block to accommodate 73 patients was *laid by Lord Nuffield* who, in December last year offe *the governors of the hospital* £46,000 for this purp The new block, which will be called Nuffield Hou contain 33 separate rooms, and five four bedded with a cubicle for each patient It will have its ow in charge resident surgeon, and fully equipped op theatre suite There will be waiting *and* loun for visitors and patients, and a complete k food unit The whole of the roof, which is a garden, and is approached by electric bed available *for* patients and the central por used with movable glass slides

After the ceremony Lord Nuffield pre to the students of the medical school and [illegible] the address from which extr p 821

ROYAL SOCIETY OF MEDICINE

SECTION OF THERAPEUTICS AND PHARMACOLOGY

r a meeting of this section held on Oct 8th,
. J H. BURN delivered his presidential address
he

Control of the Blood Pressure

. Burn said that the maintenance of the blood
sure was still thought to be in the main an active
ess, depending on the constrictor effect of the
pathetic nerves and of the circulating hormones,
naline and vasopressin.

SURGICAL MEASURES

urgical treatment of high blood pressure was
easing and was based on the view that removal
portions of the sympathetic system or of the
arenal glands must necessarily do good. Some
ess had in fact been achieved in two directions
nesco and Brüning had found that attacks of
na pectoris disappeared in patients from whom
left sympathetic chain (from below the superior
ical ganglion down to and including the inferior
ical or stellate ganglion) had been removed.
ous observers following C H. Mayo had found
the crises of paroxysmal hypertension dis-
ared after removal of a chromaffin tumour
the neighbourhood of the suprarenal gland.
eemed quite clear that paroxysmal hypertension
t be due to the sudden liberation of adrenaline
he blood. But apart from these two directions
ical treatment had not been successful Attempts
been made to treat continuous hypertension
by removal of the suprarenal gland and by
oval of portions of the sympathetic system,
both these methods seemed to have failed
attempts had not stopped at removal of the
nd. third, and fourth lumbar sympathetic ganglia
adjacent branches on both sides, but had
ntly been extended by Adson and Brown to
ide bilateral section of the anterior roots of the
al cord from the sixth thoracic to the second
bar inclusive Some lowering of the blood pressure
ned to have resulted from paralysis of the
ominal muscles.

THE THEORETICAL BASIS OF THESE MEASURES

was time to reconsider the theoretical basis of
attempts. Prof Burn described first the results
Alvarez's researches on the variation in normal
d pressure Alvarez examined 6000 university
ents and graduates varying from 16 to 40 years
ge and found the systolic blood pressure to range
85 mm to 190 mm. The variation in blood
sure was not more extensive in the men taken
whole than it was in particular age-groups.
s there were 1216 men of 18 years of age, and
r blood pressure varied from 85 mm to 180 mm.
n frequency distributions of these blood pressures
plotted. it was evident that these were approxi-
ely normal and that blood pressure was a property
ing continuous variation just like body-height
ce it was wrong to regard blood pressures of
nm or of 180 mm. as necessarily pathological;
might be quite normal The standard deviation
ulated from Alvarez's figures showed that 20 per
. of men had a blood pressure greater than
140 mm , and
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Taking the factors
for keeping the blood pr
out that adrenaline was
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therefore be remembered that
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continuous hypertension. In the sa
lately been shown that vasopressin exer
effect when injected into the ventricle
Cushing had demonstrated that such a
caused flushing, sweating, and a fall of bod
ture, in contrast to the opposite effects
intramuscular injection Possibly the
route was the normal course of the horm
the body Lastly it had recently been show
the dog the sympathetic supply to the muscle
hind limbs contained a large vasodilator compo
In the laboratory it was indeed much easier to obs
the dilator than the constrictor effect. In this
nexion it was interesting to recall R. W. Miche
observations at Cambridge that the blood pressure
rowing men was usually much less than the average
was evident that all three mechanisms common
regarded as purely constrictor also might exer
dilator action and that the truth of the matter
be that these agents, nervous and hormonal, di
merely raise the blood pressure but rather contr
it and were able actively to lower it. Hence to rem
suprarenal glands or portions of the sympatheti
system might be a treatment calculated to worse
rather than improve a patient's condition.

THE VASCULAR ACTION OF ETHER

In conclusion Prof Burn discussed some evide
concerning the vascular action of ether when u
as an anæsthetic. He pointed out that although eth
was much less potent in this respect than chlorofor
nevertheless it weakened the heart and lessened
output Ether also caused vasoconstriction, an
because of this the coronary flow was maintaine
The vasoconstriction was caused by impulses passi
down sympathetic nerves, for if the ganglia were fi
paralysed by nicotine to prevent the passage of su
impulses ether caused a very large fall of blo
pressure Under ether anæsthesia the periphery m
have a deficient blood-supply, for a weakened h
pumping blood through constricted arteries could
maintain a normal circulation. If the periph
circulation remained poor for very long it was cle
that the patient must suffer A better understandin
of the ill-effects of ether might encourage a great
use of some of the newer anæsthetics.

A CENTRAL POOR-LAW HOSPITAL FOR DU
The county council of Durham is proposing
£240,000 upon the erection of a central poor-la
at Dryburn with 300 beds

ATORY NOTES

ung dressings are sufficient to keep the patient d
comfortable. The Hamilton-Irving box is
ed, and the absence of pressure on the wound sa
ent much discomfort, while far greater freedo
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O-STAGE OPERATION

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AND NOTICES OF BOOKS

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pulsate, extravasation and coagul
occurs in the submucosa, and fin
occludes the artery as well as the v SOUTTAR D M,
of tissue supplied by these vesse rgeon, London Hos-
of circulating blood, with conse Heinemann (Medical
necrosis is evident first in the 387 21s
muscular coats and later sprea nse amount of ground,

A man 66 years of age theory, through radio-
complaining of "terrible pain effects of radium to the
Constipation had been not various regions of the body
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had been open only once al and mathematical side of
experienced Colicky pain g out to master what is known
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much troubled by bor tomic structure, the emission and
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but he may have lo ant energy, and the characters of
The patient had in radiations The chapter on gamma
was furred but ticularly important, and includes some
the temperatures showing the absorption of hard and
There was e various metals, the percentage of radiation
appeared to d, and the half-value layers for different
was a hype es of platinum, all points of practical
tenso all o e The chapter on the biological effects of
was obviou
below the which follows is also a fair summary of recent
nothing a ntal work, but the arrangement which
No extern s this section from those on the principles of
After- erapy, and on the action of radium upon the
signs es in man, is unfortunate since the reasoned
intest inuity which makes the section on physics so
com dable and clear is thereby lost The description
the technique of radium applications is very good
and shows the high standard of technical skill possessed
by the author and demanded of his assistants For
the measurement of dosage, Mr Souttar prefers the
"Natural Unit" first defined by Sievert and adds
the letter G (used to indicate the unit) the filtration
except increasing the precision of statement A nominal
brig tion has been ascertained between this unit and
The International "r" unit, and it is an accepted
and reliable method of expressing dosage Many
observers hold that the biological method as practised
by Failla and Quimby, which is here dismissed in a short
paragraph as far too vague, is also sound and scientific
The chapters on the treatment of cancer are very
well written in the graphic style which characterises
Souttar's book on surgery Since this monograph
is clearly meant for medical readers with a special
interest in this subject, an elementary knowledge of
the anatomy of the breast or œsophagus might have
been taken for granted The sections on carcinoma
of the tongue and of the buccal cavity are particularly
good, and the special methods involving the use of
the Souttar radon seed introducer are carefully
described Carcinoma of the breast may also be
treated in this special way, and the technique for the
transthoracic implantation of seeds in tumours of
œsophagus which the author tells us is an easier
In safer procedure than might at first sight appear,
were given in full detail. A cautious attitude is adopted
regarding cancer of the rectum and prostate with
which all who have had experience of the use of
radium in these sites will agree Cancer of the uterine
cervix has a special chapter, and several methods are
the described including that used at the London
postern al
being e is one important omission from the chapters
as blood- those who read explicit directions on how
thinnest a to be treated will seek in vain any statistical
Thus the

evidence of the results of this treatment Only two tables are given, both concerning the radium treatment of cancer of the breast One shows 29 out of 52 cases alive for an average period of two and a half years, the other, published in 1930, relates to cases the majority of which were treated only in 1928 and 1929 The average length of life in untreated cases is 38 months, so these figures have no practical value, and the day is past when personal impressions can be accepted as criteria guiding the choice of methods of cancer therapy *It is to be hoped that in a future* edition the precise instructions on technique will be supported by figures showing the degree of success to be anticipated if they are carefully followed This is a remarkable book which could only have been produced by a surgeon of unusual attainments, and deserves a wide public

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Diseases of Women

Fifth edition. By TEN TEACHERS Under the direction of COMYNS BERKELEY M A, M D, M C Cantab, F R C P *Lond*, F R C S Eng, M M S A (Hon) F C O G, Obstetric and Gynæcological Surgeon to the Middlesex Hospital London Edward Arnold and Co 1934 Pp 568 18s

THIS popular work remains largely unchanged In the fifth edition an account of the functions of the ovary and other endocrine glands, and their relation to menstruation, has been inserted The arrangement of the subject is orthodox and the multiple collaborative authorship undoubtedly results in the production of a work with a broad outlook There will be but little disagreement with the views expressed Only one point of major importance seems to us open to criticism The objections to the operation of sub total hysterectomy, now seldom performed, receive less attention than do the alleged dangers (viz, damage to the ureters or a resultant diminution of the length of the vagina) of the removal of the whole uterus Illustrations of the naked-eye view of pathological specimens are numerous and excellently chosen and reproduced Further revision is required of the material used to demonstrate microscopic appearances For instance the microscopical appearance of the endometrium in the characteristics of chronic endometritis cannot be discerned in any of the four illustrations purporting to depict this condition, the tissue appearing normal and healthy, and the micro representation of the alleged columnar-celled carcinoma of the cervix belies its title The diagnosis of carcinoma of the portio vaginalis of the cervix by Schiller's method is described No attention is drawn to the fact that a carcinoma of the cervical canal or of the body of the uterus can be present above what is shown to be, by this easy method, a normal healthy vaginal cervix Apart from these points the fifth edition is excellent and will prove of even greater help to the student than were its predecessors

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Benign Tumours in the Third Ventricle of the Brain

Diagnosis and Treatment By WALTER DANDY, M D Adjunct Professor of Surgery, Johns Hopkins University London: Baillière, Tindall and Cox Pp 171 22s 6d

IN this monograph Prof Dandy describes 21 cases of benign tumour of the third ventricle that he has treated by operation His work breaks new ground in intracranial surgery. It is entirely due to application of ventriculography that Dandy has been able to recognise these cases and to achieve such excellent results by bold surgery The tumours excised include five colloid cysts attached to the roof of the third ventricle, and a heterogenous group of 16 benign tumours, many of them ependymal gliomas. Prof Dandy excludes pineal tumours, gliomas that extend to the third ventricle from other parts of the brain, and craniopharyngeal and pituitary tumours. In the five cases of colloid cyst the tumour was completely removed, and four of the patients had been alive and well at the time of writing for periods up to ten years after operation Of the 16 patients of the heterogeneous group, six died after operation, and the remainder were relieved or cured Each case is reported in detail with profuse illustrations

While the description of the symptoms and signs is in places meagre, it is nevertheless clear enough that these tumours for the most part present no certain localising signs The one distinctive clinical phenomenon that occurs with any degree of frequency through the series is intermittent attacks of headache, visual disturbance, vertigo, weakness and numbness of the limbs, brought on by changes in posture But, as Prof. Dandy recognises, such attacks are by no means pathognomonic of tumours in the third ventricle.

The pathological descriptions are not up to the standard of the rest of the book No reference is made to the association of attacks of hyperglycæmia with colloid cysts of the third ventricle The author's claim that by ventriculography it is possible to make a differential diagnosis of the type of a tumour of the third ventricle is not supported by his own work, for he has twice operated on a tuberculoma of the third ventricle and once on an aneurysm extending into the third ventricle.

This is a criticism of Prof. Dandy's statements but not of his work, which is pioneer work of fundamental importance

Manual of Determinative Bacteriology

A Key for the Identification of Organisms of the Class Schizomycetes Fourth edition. By D H BERGEY. Assisted by a Committee of the Society of American Bacteriologists. London . Baillière, Tindall and Cox. 1934 Pp 664 27*s*

Bergey's Manual of Determinative Bacteriology, the fourth edition of which has just appeared, is whatever its faults and deficiencies the most notable attempt in recent years to provide a classification of bacteria and a key to their identification Some bacteriologists consider that any scheme for the classification of bacteria is likely to be so unsatisfactory as not to be worth while. This is, however, unduly pessimistic. A certain amount of systematisation in bacterial nomenclature is much to be desired and not difficult to achieve , but there is room for acute differences in opinion as how far it should go Bergey and his colleagues have gone a long way, further in some directions, than seems helpful It is doubtful how far the synopsis and key provided in their book give help in identifying many of the species described, let alone giving them acceptable names What is commonly called *Bacillus pseudotuberculosis rodentium* is included as a *Corynebacterium* with the diphtheria bacillus and the diphtheroids We cannot understand why this well-known organism should be separated from the *Pasteurellæ*, since it so closely resembles *Past pestis* in morphology, biochemical reactions, and even in antigenic make-up that it might almost be called a para-plague bacillus Another point in the classification, admittedly more controversial, is the subdivision of the coli-typhoid-dysentery group into *Escherichia, Salmonella, Erbethella*, and *Shigella*. The Society of American Bacteriologists in their report of 1920 gave one generic name *Bacterium* (Ehrenberg) to these types, and this has been widely accepted The attempt to classify the streptococci is not very successful, and it seems doubtful whether anything is gained by removing the pneumococci from the streptococci and placing them in the separate genus *Diplococcus*, though this was also done in the 1920 report of the Society of American Bacteriologists.

Certain sections of the book, particularly those on the actinomycetaceæ and other "higher" forms, are really very good, partly because morphology here gives more aid, but partly, no doubt, because Dr Bergey and the majority of his working colleagues are more interested in non-pathogenic than in pathogenic forms. Our chief complaint of Bergey's classification is that in the light of present knowledge it classifies too much and that in going beyond the reports of the Society of American Bacteriologists of 1917 and 1920 (familiar to English readers in Topley and Wilson's and other modern text-books) it may hinder rather than help the general acceptance of a working scheme of classification A note opposite the title-page reminds us that the classification has not so far been accepted by the Society of American Bacteriologists and that it must not be taken in any sense as "official or standard."

A generally acceptable classification of bacteria, if it is ever devised, will call for a fine display of scholarship combined with common sense It can hardly be claimed that Bergey's book is outstanding in either, but it is none the less an indispensable addition to the book-shelf of the serious bacteriologist Its treatment of the non-pathogenic bacteria alone makes it more than worth its comparatively modest price.

The Cyclopedia of Medicine

By Various Contributors Edited by G. M PIERSOL, M D Philadelphia : F. A. Davis and Co. Twelve volumes. $120

Vols VIII and IX of this work of reference have now been issued. A noteworthy section in Vol VIII. is that on diseases of the liver and biliary tract ; the commoner disorders of these organs are discussed with clarity and precision This also applies to the account of lung diseases which is illustrated by radiograms of high standard The two separate articles on lung abscess and pulmonary suppuration might have been combined with advantage The principles of metabolism are dealt with by several well-known contributors and provide a useful summary of orthodox views

Volume IX includes several articles on nervous diseases, and sections on pleurisy and pneumonia, again with excellent radiograms. The indices are very full, and the authoritative standard evident in the volumes previously published is maintained.

The price of "The Twilight of Parenthood," by Enid Charles (Watts and Co , London), which was reviewed in our columns last week, is 7*s*. 6*d*., and not as then stated.

THE LANCET

LONDON: SATURDAY, OCTOBER 13, 1934

A TEST OF RENAL FUNCTION

THE most important function of the kidney is to dispose of substances no longer needed by the body, with a minimum loss of those it can still use. The best examples of these opposite groups of substances are urea and water—the one a useless waste product of protein katabolism, the other the most essential constituent of protoplasm—and the best illustration of the power of the kidney lies in the fact that normal urine contains something like a hundred times more urea than is present in normal blood. It is natural therefore that some of the tests of renal efficiency should be based on the power of the kidney to concentrate urea. The problem resolves itself into a search for some simple mathematical relationship which will correlate at least three factors—namely, the urea content of the blood and the urine, and the volume of the latter—each of which is liable to significant variation in physiological circumstances. The early formula of AMBARD[1] has never been widely used in this country, and although it was for some years popular in France it has not withstood the test of time. The urea concentration test of MACLEAN, in which the concentration of urea in the urine is determined after a large dose of urea given by the mouth, had less pretension to mathematical accuracy than AMBARD'S formula and perhaps for this reason has enjoyed a wider and longer vogue. Until recently MACLEAN'S was undoubtedly the most reliable and useful test available to the clinician, but it has several drawbacks. If diuresis occurs during the test (and urea itself is an effective diuretic), the urea content of the urine may fall below the ideal level of 2 per cent in a perfectly normal subject; and conversely, when the volume of the urine is abnormally low the concentration of urea may rise to 2 per cent in a person with appreciably impaired renal function. Furthermore, as W. G. OAKLEY[2] has lately pointed out, the blood urea is ignored and since in gross nephritis this may reach extremely high levels, the level of urea in the urine can be maintained with relatively little effort at concentration by the kidney.

Clearly, then, the blood urea and the volume of the urine must enter into the equation, and ADDIS'S urea clearance test is an attempt to meet this criticism. In actual practice the test at present on trial is a simplification, by VAN SLYKE and his associates, of ADDIS'S procedure. After a light breakfast, from which milk and diuretics such as tea and coffee are excluded, the bladder is emptied and the urine secreted during two consecutive hours is carefully and separately collected and measured, its urea content being determined. Midway between the two collections a sample of blood is taken for a blood-urea estimation. Three quantities are thus determined—the volume of urine, the amount of urea excreted per hour (or minute), and the percentage of urea in the blood. Since the urea excreted must all have come from the blood, the volume of blood which *has been completely cleared of urea can be quite* simply calculated from the formula—

$$\frac{\text{urea content of urine}}{\text{urea content of blood}} \times \text{volume of urine per minute}$$

When the volume of urine excreted exceeds 2 c.cm. per minute the clearance amounts to about 75 c.cm. of blood per minute, a figure which is not significantly affected by diuresis. But with urine volumes below this level the formula no longer holds good and is replaced by—

$$\frac{\text{urea content of urine}}{\text{urea content of blood}} \times \sqrt{\text{volume of urine per minute}},$$

for which the normal is about 54 c.cm. of blood per minute. The results obtained in disease are expressed as percentages of one or other of these normal figures. The above formulæ do not hold good in the case of children, where a correction for the surface area of the body must be applied.

It is too early to decide the value of this simplified test. OAKLEY[2] has recorded a series of cases of acute nephritis in which the test was performed at intervals during the course of the disease; his results show that the test may point to considerable renal insufficiency when the blood urea lies within normal limits, and suggest that the test gives an accurate index of the progress of the disease. E. HINDEN,[3] like many American writers, has come to a similar conclusion. On the other hand, Dr. C. L. COPE, in a paper published elsewhere in our present issue, suggests that VAN SLYKE'S simplifications may sometimes involve a sacrifice of reliability. In the unmodified technique of ADDIS the test is preceded by a large drink of water and a large dose of urea, the object being to subject the kidneys to the greatest possible load. Since the normal kidney has an enormous functional reserve the theoretical importance of these preliminary precautions seems clear enough, and as COPE points out, in efficiency tests relating to other organs, such as the glucose tolerance test, a maximum load is generally applied. It is true that where the kidney is already much damaged its functional reserve has disappeared; it is always working at full load and the preliminary dose of urea and water is unnecessary. At the same time it looks as though the fuller technique of ADDIS is necessary to demonstrate those minor degrees of renal damage which give little or no clinical indication of their presence and in which the test would be most useful to the clinician. Whichever procedure is employed it is of the greatest import ance to collect and measure the urine accurately Residual urine in the bladder before the test, or incomplete emptying of the latter during the test, will clearly introduce grave error

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[1] Jour. de physiol. et path. gén., 1912, xiv., [illegible]

[2] St. Bart.'s Hosp. Rep., 1933, lxvi., [illegible]

[3] THE LANCET, [illegible] 1934, i., [illegible]

It is evident that finality has not been reached in the attempt to express the activity of the kidney in mathematical terms The purist might suggest that the quest is hopeless, but until he has provided a definition of life the purist has little place in biology and still less in practical medicine It seems clear at any rate that the urea-clearance tests represent an advance in diagnostic technique for which the clinician should be duly grateful

GIFTS FROM PATIENTS

THE current report of the Medical Defence Union includes a reference to the embarrassment of a doctor upon whom a wealthy old lady, grateful for his devoted services, had pressed substantial gifts of money At her death her relatives claimed a review of the accounts of the doctor and his partner and a refund of the gifts Satisfied of the bona fides of the doctor, the society set itself to resist the claim The doctor's senior partner, however, reasonably preferred in so delicate a matter to settle the dispute by an acceptable agreement to return a part of the gifts The incident is a reminder of the legal inferences liable to be drawn wherever there exists a confidential relationship—such as that of doctor and patient or of solicitor and client—calculated to give one person an influence over another. It was a well-established principle of the Court of Chancery, as Lord Justice Turner observed in Rhodes *v.* Bate, that persons standing in a confidential relation towards others cannot entitle themselves to hold benefits which those others may have conferred upon them unless they can show to the satisfaction of the court that the persons by whom the benefits have been conferred had competent and independent advice in conferring them The principle has been declared to be unaffected by the age or capacity of the person conferring the benefit or by the nature of the benefit conferred The burden of proving the validity of the transaction lies on the person who obtains the benefit

The operation of the principle is best understood by a glance at the cases in the law reports where gifts by patients to doctors have been challenged Many of them were decided a century ago or more and the facts make curious reading to-day The decisions show that, where the gift is of trifling amount, the courts will not interfere merely because a confidential relationship existed. But where the gift is "so large as not to be reasonably accounted for on the ground of friendship, relationship, charity, or other motives," the recipient will be required to satisfy the court that the donor had competent and independent advice and was really a free agent capable of exercising an independent will upon the matter Such was the ruling in Allcard *v* Skinner (1887) where the relation was that of mother superior and nun In Dent *v* Bennett, a case of medical relationship decided in 1839, the amount was unquestionably substantial Bennett, a surgeon and apothecary, was blessed with a patient 85 years old who agreed to pay him £25,000 for medical and surgical assistance for the remainder of his life The annual bills for professional attendance had previously been trifling and the patient's health was good at the date of the agreement. After the patient's death the contract was successfully impugned His mind and will, said the Lord Chancellor, had been strangers to the terms of the document, and he went on —

> "When I find an agreement so extravagant in its provisions, secretly obtained by a medical attendant from his patient of a very advanced age and carefully concealed from his professional advisers and all other persons, and have it proved that the habits, views and intentions of the deceased were wholly inconsistent with these provisions, I cannot but come to the conclusion that the medical attendant did obtain it by some dominion exercised over his patient How it was effected, whether by direct fraud or by what other means, the defendant has by the secrecy of the transaction prevented my having any direct testimony By that he cannot profit."

Bennett had tried to argue that his treatment the patient had ceased before the date of the agreement The Lord Chancellor closed this loophole The relation of medical attendant and patient does not cease, he declared, because the patient has not medicine actually administered to him at the time, any more than the relation of attorney and client ceases because no suit may be actually in progress This dictum was later confirmed in Rhodes *v* Bate, where a confidential relati has once existed, the court will presume continuance unless some positive act discontinuance is proved

Bennett, we must regretfully admit, was great credit to his profession, and the law reports record other cases almost as bad. Billage Southee (1852) is one of them. Billage, a Cambridge shoemaker, had continuous medical an surgical treatment from Southee who had t recover his fees by an action in the local court Billage subsequently gave up shoemaking an quitted Cambridge because his daughter was about to marry a peer of high degree He had meanwhile been calling in Southee again for treatment in spite of their litigation, and he was induced t give him a promissory note for £325 in payment for these later services, although the actual fe now due were as little as £25 In proceedings on the promissory note the Court of Chancery said that Southee's conduct in obtaining th promissory note from a poor patient "just whe the patient's position in life was about to t changed" was not permissible in equity Th best known of more modern cases is Mitchell Homfray, decided in 1881 Mrs Geldard gav her medical attendant, Dr Homfray, two cheques of £500 and £300 to buy himself a house He tol the court that he had voluntarily paid her a annuity of £40 in consideration of the £800 sh gave him Rather to the regret of the Court o Appeal, the case was tried before a jury whe Mrs Geldard's executors sought to recover th money The jury found that the £800 was a gi ot a loan, that there was no undue influence or raud, and that, after the relationship of doctor nd patient had ended, Mrs Geldard had intentionally adhered to what she had done This meant judgment in Dr Homfray's favour, and on appeal the findings of the jury prevented the udges from interfering on grounds of equity It was admitted that Mrs Geldard had no independent advice, and the Lord Chancellor was sorry that the jury had not been asked whether she was aware that her gifts were impeachable The Court of Appeal contented itself with affirming the general principle which was again applied in 1902 by Mr Justice Swinfen Eady in Radcliffe *v* Price Mrs Dowling had given her doctor gifts amounting to £800 There was no suggestion that he had made misrepresentations or put pressure upon her or that she was of weak intellect or incapable of managing her affairs Though the judge remarked upon the special fact of constant attendance upon a patient of great age and somewhat illiberal education, he decided the case on the general principle It was incumbent on the doctor, he said, to see that Mrs Dowling had independent advice The doctor had failed in this duty The result was a judgment for Mrs Dowling's executors for £800 and an order that the doctor should pay the costs of the action

As these two last cases show, the medical profession is not always convicted of bad faith, but something more than good faith is required Oddly enough, the law, which is so vigilant where gifts are made during life-time to persons in confidential relationships, is ready to relax its requirements where the benefit is conferred by will The dicta of Lord Penzance in Parfitt *v* Lawless (1872) indicate that the mere proof of the existence of the relation of doctor and patient does not raise any presumption of undue influence sufficient to vitiate a gift by will Whereas a gift during life-time may be set aside unless the recipient can prove the donor's free and unfettered judgment, this rule of equity does not apply to the making of wills The case was one where a *Roman* Catholic priest and confessor received a bequest from a widow with no evidence of active interference, importunity, or special control Lord Penzance indeed declared that the "natural influence" of a person in a confidential relationship "may lawfully be exerted to obtain a will or legacy so long as the testator thoroughly understands what he is doing and is a free agent"—though persuasion must stop short of coercion It may be added that the burden of proving undue influence in order to set aside a will is always upon the party alleging it On the other hand, if cases of this kind find their way to a jury juries are often inclined to show special sympathy towards disinherited relatives when money has been left away from the family The legacy hunter has been derided by the satirists of all ages, and the medical profession will hardly be persuaded by Lord Penzance's language to "exert its natural influence" or "press its claims" to secure a share of the spoil when the patient dies

PROPHYLAXIS AND ANAPHYLAXIS

OCCASIONS often arise when it is desirable to confer temporary passive immunity by injecting an antitoxic serum derived from immunised horses Practitioners are sometimes reluctant to make these prophylactic injections they are afraid not so much of "serum sickness" a few days afterwards as of the immediate anaphylactic shock which may follow this or some later injection of serum At the same time, as A BUZELLO[1] remarks in discussing prophylactic injections of tetanus antitoxin, anaphylaxis is really very rare considering the enormous number of patients injected SIR DAVID BRUCE[2] reported that during the late war a million subcutaneous injections of serum in military hospitals in England resulted in 11 men experiencing anaphylactic shock, from which all recovered Injection by the subcutaneous route, ensuring slow and gradual entry of the proteins into the circulation, was relatively unlikely to cause shock in the potentially sensitive—who must surely have exceeded 11 in number—and BUZELLO advises that for prophylaxis this route should always be employed BRUCE's patients received usually 500 units of tetanus antitoxin contained in 3 c cm of horse serum, and it appears that the ordinary prophylactic dose in Germany is one of the same number of units contained in 5 c cm of horse serum Nowadays, however, refined or concentrated sera are available from which almost all the proteins have been removed leaving only the globulins with the adhering antitoxic principle, and the use of such sera has much diminished the incidence and severity of serum reactions of any kind[3] Tetanus antitoxin for example, is now produced of such titre that 1000 international units are contained in 1 c cm of serum, and whereas at one time to inject 1000 units of diphtheria antitoxin was to introduce 2·5 c cm of serum into the tissues, 2500 units are now compassed in 1 c cm or less of the refined product

Even so, however, the possibility of shock following primary injection of the naturally hypersensitive, such as asthmatics or those of asthmatic stock, or reinjection of those who have been sensitised by a prior injection cannot be ruled out entirely Of the two classes the asthmatics are those from whom trouble is most to be apprehended Whereas inadvertent reinjection of the artificially sensitised patient rarely in adults and very rarely indeed in children results in shock unless the intravenous route is employed, primary injection of a minimal amount of *normal* horse serum at least may in the asthmatic of any age [illegible] produce within a few minutes an alarming [illegible] that possibly fatal attack of asthma and a general[illegible] of the urticarial eruption Hence in the asthmatic [illegible] those of asthmatic stock any attempt at [illegible] prophylaxis and, a fortiori, serotherapy [illegible] made with the utmost precautions [illegible] such patients BUZELLO thinks that [illegible] history of an injection of serum some years previously then reinjection for prophylactic purposes slowly and carefully by the subcutaneous route is unlikely to be attended by trouble. If, on the other hand, an interval of weeks only has elapsed then allergy may be manifested unless the prophylactic injected is contained in ox or sheep serum instead of serum from the horse In this he is in agreement with other workers such as R. KRAUS and D HARLEY whom we cited in a previous article [3] Such sera, he thinks, should always be at hand in institutions where reinjections have often to be made in potential allergics, since it is highly probable that the first injection consisted of horse serum While sensitivity may be ascertained with considerable but not absolute certainty by injection of diluted fractional amounts of serum—intradermally as a rule but intravenously if that route is proposed later—the abolition of sensitivity (desensitisation) is more difficult and more uncertain Several methods are alluded to by BUZELLO If on clinical grounds it is absolutely essential to inject serum by the intravenous route into a patient actually or potentially sensitive, then he advises that preliminary intramuscular injections of serum diluted 1 in 10 should be made every ten minutes in increasing doses, beginning with 1 c cm, then 3, next 10, and finally 25. If there are no signs of anaphylaxis then 1 c cm of undiluted serum may be injected intravenously, followed in 15 minutes by the slow introduction by the same route of the rest of the therapeutic dose undiluted. It appears that some German makers of serum include a small ampoule for the purpose of these preliminary desensitising doses, and this obviates opening the larger container until it is actually required for therapy. BUZELLO agrees with VON STARK that under any conditions of sensitivity, dosage, or route, anaphylactic shock is less likely to occur if the injection is made while the patient is under light narcosis such as may be required for the preliminary cleansing and trimming-up of wounds possibly infected with tetanus For the actual treatment of shock he advises the following measures. instant interruption of the serum injection, immediate intravenous injection of 2 c cm of Cardiazol, and subcutaneous injection of 1 c cm of 1 in 1000 adrenaline, followed by the intravenous introduction of 1 c cm of adrenaline contained in a large volume of warm normal saline. Artificial respiration must be maintained until breathing has again become normal [4]

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[1] [illegible] July [illegible] 1934
[2] [illegible] Hyg 1920 [illegible]
[3] THE LANCET 1933 [illegible]

It is the experience of most clinicians in this country that the use of adrenaline—which must always be ready to hand whenever or however the injection of serum is proposed—is in itself sufficient successfully to combat anaphylactic shock. But when all is said, what is the real risk in everyday practice of provoking such shock by prophylactic injection of antitoxin contained in horse serum, especially if this has been concentrated or refined? Asthmatics apart, the risk following primary injection by a route other than intravenous—which there is no point in employing for prophylaxis—is infinitesimal. The risk of reinjection for prophylaxis—asthmatics and the intravenous route again excepted—is hardly greater, especially if the patient is a child On the other hand, great risk arises from the injection or reinjection of asthmatics with any dose by any route, and some risk from the reinjection intravenously of those who have potentially been sensitised by, for example, a previous prophylactic injection The experience of the medical staffs of large fever hospitals, who are faced very frequently with the problem of the prior dose, is that actual sensitisation rarely results, that desensitisation is not wholly reliable, and that the phenomena of anaphylaxis require the intravenous route for their evocation. Evoked, as they rarely are when concentrated serum is used and then usually in a modified form, they are controlled by adrenaline. The asthmatic is unaccountable and is to be regarded with the utmost circumspection He may sustain without event a massive therapeutic dose of serum injected inadvertently into a vein, or he may become alarmingly ill a few minutes after a minimal injection made extravenously.

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[4] The value of adrenaline combined with artificial respiration was clearly demonstrated in a case of severe serum shock reported by J Grant and M. M Scott in our issue of July 14th, 1934 (p 80)

CLINICAL RESEARCH AT GUY'S

THE intention of the Medical Research Council to subsidise a clinical research unit in another hospital now that the Rockefeller Foundation have endowed the directorship held by Sir Thomas Lewis, F R S, at University College Hospital, was announced in their report of 1931–32.[1] The project has now materialised at Guy's, where Dr. Ronald Grant, F R S, who has had experience of the organisation of such a unit as assistant to Sir Thomas, will join the visiting staff as an ex-officio member on his appointment as full-time director of the new unit. The Council provide the salaries of the director and his assistants with the cost of all apparatus and research material used by the unit. The hospital will provide suitable laboratory accommodation and will place and maintain beds at the disposal of the director These arrangements are to be effective for a period of five years in the first instance.

This is the third such appointment initiated by the Medical Research Council, the neurological unit at the National Hospital, Queen-square, having been created two years ago under the direction of Dr A. E Carmichael The Council are clearly pursuing their declared policy of increasing the number of high-appointments for whole-time workers engaged in the scientific study of disease in the human subject,

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[1] Report of the Medical Research Council for 1931–32, p. 11

M E RAY MEMORIAL FUND.—A fund to be devoted to the assistance of King's College Hospital nurses who are temporarily embarrassed, especially those requiring rest and convalescence after illness has been established as a memorial to the late Miss M E Ray, R R C, sister-matron of the hospital from 1900–18 The capital of the fund will be placed under trustees and the income administered by a small committee of officials from the nursing staff The committee in connexion with the fund includes Sir Charlton Briscoe and Mr C. P G Wakeley

Contributions should be addressed to Miss M A Willcox R R C, sister-matron at the hospital.

ANNOTATIONS

THE NEW RADIO-ACTIVITY

For a long time past it had been almost an axiom among physicists that radio activity was something spontaneous, which could be neither retarded nor developed by any process at their command The conviction has indeed been so strong that for the last 15 years such interference has not even been attempted But the Joliots have now succeeded where Rutherford himself failed by virtue of the sensitiveness of instruments which are based in principle on that devised by Rutherford and Geiger for counting the alpha particles emitted by radium In a paper read before the International Conference on Physics held at the Royal Institution last week, Mr and Mme Curie Joliot described how, when certain substances are irradiated by alpha particles, positrons are emitted for some time, the radio activity declining in strength according to the familiar exponential law of decay This radio activity, although very minute in intensity, is something entirely new to science, and its interpretation is not at all a simple matter Take the case of the element boron If the nitride of boron is irradiated by alpha rays, and then heated with caustic soda, gaseous ammonia is liberated The radio activity separates from the boron and is carried away with the ammonia, by irradiating boron something else has been made radio active Here is an analogy with the loss and subsequent growth of uranium and thorium salts, studied with such effect by Crookes and by Rutherford and Soddy The Joliots came to the conclusion that what they had really done to the boron was to disengage a radio active nucleus which was an isotope of nitrogen and for this substance they propose the name radio nitrogen Similarly by irradiating magnesium and aluminium two new bodies are formed radio silicon and radio phosphorus Still later they found that isotopes of aluminium can be formed by the irradiation of three dissimilar elements Prof Enrico Fermi, who also contributed to the discussion showed that under slightly different conditions of bombardment—namely, by the particles known as neutrons—he could induce a condition of artificial radio activity, though of very slight extent and duration

So transforming are these discoveries that whereas hitherto radio active bodies have been regarded as the exception amongst the elements known to chemical science, they are now seen as the survivors of an age when all the elements were radio active, what the experimenters are now doing is to induce in the ordinary elements a condition which was in past ages spontaneous This discovery has been a sequel of the identification of several new components of the atom There is no reason to doubt the existence of the positron, the counterpart of the negative electron, of the neutron which by its name implies a particle devoid of electrical charge and of the diplon the nucleus of the rarer type of hydrogen About the possibility of still another the neutrino opinion is very tentative Physical laboratories everywhere are investigating the effects which these radiations when isolated may have upon matter What effect it will be asked, are these discoveries to have upon the medical use (if any) of X rays and radium? Will they lead to the artificial production of bodies as active as radium in marketable quantities, and will the old types of radiation—beta, gamma, and X rays—be discarded for the positrons and neutrons? It is related of Faraday that after expounding one of his discoveries a lady approached him and inquired "What is the use of it?" and he replied, "Madam, what is the use of a baby?" It should be borne in mind that at present the new radio activity can only be detected by means of instruments of extreme delicacy and refinement For any practical application substances far more energetic than these artificially radiant bodies would be required But the improbability of material reward will not deter the men and women who are engaged in elucidating the interaction of matter and radiation

RECURRENT DISLOCATION OF THE SHOULDER

SEVERAL interesting observations are recorded by Ivan Hermodsson in his monograph[1] on dislocations of the shoulder joint By a special radiological technique he has demonstrated a lesion of the head of the humerus in a large proportion of cases of recurrent dislocation and he advances good reasons for thinking that in origin the injury is closely allied to the rather common fracture of the greater tuberosity of the humerus His view is that the humerus, in both instances is injured by the impact of the lower part of the glenoid lip at the point where it rides over it in downward and forward dislocations The lesser lesion is a compression fracture of the postero-lateral part of the head at its junction with the greater tuberosity This part of the bone is somewhat thin, owing its origin to the ossification centre in the traction epiphysis of the greater tuberosity, and not to the pressure epiphysis of the head No loose fragment is torn off, the outer layer of bone is driven into the floor of the depression caused by the impact of the glenoid rim In a radiological study of 92 cases of shoulder dislocations, of which 23 were recurrent or habitual, the compression fracture was found to be commonest in the habitual Its presence was also demonstrated in the "traumatic" (non-recurrent) cases, especially where more than 24 hours had elapsed before reduction of the dislocation The special technique used to examine these joints is a form of tangential projection of the head of the humerus, and the lesion appears as a thickening of the bone at the site of the depression

Of the 69 cases of 'traumatic' dislocation 29 were complicated by a fracture of the greater tuberosity, and it is noteworthy that Hermodsson never found this fracture in association with habitual dislocation, in his series, indeed this was the most striking difference between the two classes Various reasons have been put forward to explain why fracture of the greater tuberosity is almost always a complication of dislocation and hardly ever an isolated lesion It has been held for example that the process is torn off by outward rotation of the bone, that it is avulsed by pressure against the acromion; and that the lesion occurs during extreme abduction of the arm against a fixed scapula the tuberosity being avulsed by its pressure against the upper part of the glenoid lip Hermodsson's opinion is that during certain dislocations the lower part of the glenoid lip impinges the surgical neck of the humerus on its exit from the glenoid fossa As the head of the bone proceeds further the tuberosity is torn off This opinion is based on radiological observations of fractures before and after reduction, and no evidence was found that the injury takes place during reduction of the dislocation In cases of recurrent dislocation the average age of the patients on the first occasion was 29. This contrasts sharply with the average age in the non-recurrent cases (49), and encourages the idea that some people have an inborn tendency to dislocate the shoulder.

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[1] Hermodsson, I Die Traumatischen und Habituellen Schulterverrenkungen nach vorn und nach unten Acta Radiol Suppl xx, [illegible] 1934

CHRONIC RHEUMATIC POLYARTHRITIS

In a lecture to the Hunterian Society, of which we printed a summary,[1] Dr Jacques Forestier related a long series of cases of rheumatoid arthritis three-quarters of whom lost their pain and much of their disability after treatment at a spa with injections of gold salts Our correspondence columns also contain evidence of a more hopeful outlook for sufferers from rheumatoid arthritis Scandinavian experience confirms this Dr. A Tanberg writes[2] · "The pessimism which formerly marked the attitude of doctors towards this disease and its evolution has undoubtedly during recent years given place to a more cheerful view " He is here referring to investigations conducted in 1926 by the Swedish sickness insurance authorities who followed up the subsequent careers of those patients who were given institutional treatment in the period 1915–23 It was found that from three to ten years after the completion of treatment, about 62 per cent were so well that they could wholly or for the most part earn their own living Yet the overwhelming majority of these patients had been quite unfit for work when treatment was instituted Exactly the same figure, 62 per cent, has been found by Dr Zimmer at Prof. Bier's clinic in Germany Be it noted, however, that these achievements refer to institutional treatment ; in Dr Tanberg's opinion the results of treatment under ambulant conditions are much inferior. The Swedish investigations also stress the value of early treatment, 75 per cent of the patients receiving institutional treatment within a year of the outbreak of the disease were restored to more or less full working capacity, whereas this was the case with only 57 per cent of the patients who did not receive treatment till their disease had lasted three years or more After thus proving his case for early, institutional treatment, Dr Tanberg states that when the outbreak of articular symptoms has coincided with signs of acute disease in the teeth or tonsils, it is fairly safe to promise the patient a successful issue from dental extractions or a tonsillectomy But the tonsillectomy which is no more than a bow drawn at a venture and which does not depend on the clear evidence of synchronous inflammation in throat and joint is apt to prove futile. Indeed, it would seem that in the Scandinavian countries—as possibly in England—the doctrine of focal infection is losing ground as far as the teeth and tonsils are concerned in relation to polyarthritis Growing attention is being paid instead to intestinal diseases, notably chronic colitis, as the source of polyarthritis Dr Tanberg is less impressed by the results of specific vaccine treatment than by those of non-specific irritation-therapy—e g, the injection of foreign proteins, combinations of iodine, sulphur, formalin, formic acid, and various metal salts What matters more than choice of remedy is the mode of administration of whatever drug is used to stimulate the organism to mobilise its defences Instead of changing from one substance to another it is wiser to familiarise oneself with the action of one, and to proceed tentatively in each case till the happy mean is reached between no reaction and one that is too violent. It is well after a course of such treatment to give the patient a holiday from it for a couple of months instead of fussing with the same or some other treatment, and if the patient has a rectal temperature of 37 7°–38° C, as he surprisingly often has, he should be kept in bed as strictly as if the same temperature were due to tuberculosis Dr. Tanberg's experience will find an echo in our own spas.

BILE SALTS IN PNEUMOCOCCAL EMPYEMA

As long ago as 1900 Neufeld described a reaction which has proved of great value to bacteriologists in distinguishing cultures of the pneumococcus from those of allied species The test depends on the remarkable lysibility of the pneumococcus in natural bile or in weak solutions of various bile salts It is melancholy to note that some 30 years seem to have elapsed before serious efforts were made to apply this property to human pneumococcal disease Lately, however, bile salts have been tried in the treatment of empyema in the hope that when they were introduced into the pleural cavity the pneumococci would undergo lysis as they do in the test-tube At first commercial sodium taurocholate was employed[1]; but later the purer sodium desoxycholate (introduced into bacteriology by W Mair in 1917) was substituted[2] and no toxic effects were noted with it in the concentrations used. An improvement in the method has been recently suggested in these columns,[3] based on the in-vitro observation that the lysibility of pneumococci in desoxycholate is greatly increased if sodium chloride is present in relatively high concentration. Transferring this observation to clinical conditions it is suggested that before introducing bile salt into the empyema cavity the latter be washed out with hypertonic saline leaving enough to provide a suitable concentration of electrolyte Caution is clearly necessary in selecting the strength of the salt solution used, since highly concentrated solutions may have an irritant effect on tissues, as was shown by Sir Almroth Wright in his studies of war wounds

The bile-salt treatment of empyema seems to deserve a fair clinical trial, two indications being metapneumonic empyema, and tuberculous pyothorax with secondary pneumococcal infection If it prove successful it will demonstrate the value of a knowledge of bacteriology in studying medical problems

THE SURGICAL TREATMENT OF AURAL VERTIGO

Some useful and pertinent observations on vertigo of aural origin, with especial reference to the question of surgical intervention, have recently been made by A. Hautant[4] He makes no claim for originality, points out that it is 30 years since some English surgeons, notable among them being Richard Lake attempted the treatment of aural vertigo by destruction of the sensory apparatus of the labyrinth According to Hautant, several varieties of aur vertigo may be distinguished. Some patients, nearly always women, after surgical interventions on t ear, and particularly after labyrinthine and cr disturbances, suffer from a kind of constant vertigo, nstability accompanied by anxiety and agoraphobia, while the functional tests produce extremely violent vasomotor reactions, such patients do not have true vertiginous crises, and their treatment is not surgical The real vertiginous crises, on the other hand, show quite different characteristics they come on in attacks separated by completely normal ntervals of days, weeks, or even months, during the attack there is marked nystagmus, usually towards the sound side, while between attacks the vestibular tests are slightly diminished or sometimes quite normal The deafness in the ear which is causing the symptoms is always severe and progressive Such cases may be divided into two groups, those due to middle-ear suppuration, and those connected with a process of sclerosis of the internal ear Of the former, if the suppuration is in an active stage, radical cure of the infection is followed by cessation of the vertigo, but where suppuration has long ceased and cicatrisation is complete, relief can only be brought by opening the labyrinth M Hautant has performed this operation on 30 such patients with complete and permanent cure In the second group, with sclerosis of the labyrinth, he has also operated with success, he does not suggest operation in all these cases, for it is well known that in most of them the symptoms tend to diminish in course of time, but he believes that opening the external semicircular canal is the final resource in vertigo characterised by incessant and very violent attacks which resist all medical treatment He has operated on 13 patients in this group, *in seven of them complete cure* has been achieved which has lasted from one to ten years and in four the attacks have diminished in frequency and severity, there has been no improvement in two patients, but none has been made worse The technique he recommends is of two kinds when a radical mastoid operation has already been performed for chronic suppuration thus exposing the promontory, he *removes the osseous bridge between the oval* and round windows, when there has been no previous surgical intervention, he exposes and opens the external semicircular canal after simple antrotomy The *operation is not new*, but it *might* well be practised more often in the most severe of these distressing cases

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[1] THE LANCET, Sept 22nd, p 646

[2] Nord med Tidskr, Sept 15th, 1934, p 1204.

[1] Cocchi, C Pediatria, 1931, xxxix, 1162, Schwartz, E. Kinderaerztl Praxis, 1932, iii, 542, Thomson, A P. Proc Roy. Soc Med, 1933, xxvi, 1538

[2] Sworn, B R, and Cooper T V · Brit Med Jour, 1934 i, 1117

[3] Anderson, A B, and Hart, P D'Arcy · THE LANCET August 18th, 1934, p 359

[4] Bull de l'Acad de méd, 1934, cxi, 933

THE HÆMOPOIETIC ACTIVITY OF HUMAN LIVERS

THE preliminary observations of Richter Ivy and Kim[1] suggested that the human liver serves as a storehouse for the principle effective in pernicious anæmia This suggestion has now received further confirmation from more elaborate experiments carried out by Wilkinson and Klein[2] in this country and by Goldhamer, Isaacs and Sturgis[3] in America The active hæmopoietic principle effective in megalocytic hyperchromic anæmias was found on post mortem investigation to be absent from the liver of untreated cases of pernicious anæmia It was also absent from the liver of some patients with cirrhosis of the liver and a megalocytic hyperchromic type of anæmia Goldhamer and his colleagues suggest as a result of this observation that the anæmia in such cases is primarily due to a faulty storage of the effective principle in the damaged liver No test however, was made in any of the cases of the ability of the gastric juice to secrete intrinsic factor during life and it is likely that there was primarily a failure to make the active principle in the stomach rather than to store it in the liver Livers from partially or inadequately treated cases of pernicious anæmia in relapse or in the early stages of remission and fœtal liver showed a reduced hæmopoietic potency Normal human livers, livers from treated cases of pernicious anæmia in active remission, and livers from patients with acute yellow atrophy and a megalocytic hyperchromic anæmia were hæmopoietically active, liver from a patient with polycythæmia rubra was abnormally potent It is of particular interest that one fraction prepared by Wilkinson and Klein from a normal human liver not only produced a good remission in one patient but was able by passage through the liver of that patient to yield a potent fraction for the treatment of a further patient, notwithstanding that much of the active principle is probably lost during preparation of these fractions It is possible that passage may have increased the potency of the original fraction, or that an excess may have been given allowing for storage, or that other factors may have been brought into play by the remission, enabling the hæmopoietic system to carry on and even to store the effective principle without further supplies from external sources

THE NEWCASTLE SCHOOL

EVERY medical school has its own traits and traditions imposed upon it largely by its surroundings The School of Medicine and Surgery at Newcastle upon Tyne, which celebrated its hundredth anniversary last week had its origin in the centre of an industrial area in which glassworks and potteries, great and small were going strong, there were innumerable blast furnaces rolling mills, and foundries and on the Tyne the wooden walls of Britain were beginning to be replaced with steel Although George Stephenson was 53 and Robert 31 the railway had not then reached Newcastle and the 60 practitioners in the district spent a large part of their working day in the saddle At that time most of the doctors in Newcastle itself had apprentices and the more ambitious of them would go to the metropolis to get the necessary hospital practice to sit for a diploma Apart from London the Scottish universities, and Dublin, there was no medical school in the United Kingdom—all the north country schools were founded after 1820—but about that time some medical men in Newcastle who had enjoyed special advantages began to deliver lectures to apprentices One, Dr T M Greenhow who was later a surgeon to the Infirmary announced in 1831 a course of lectures on the principles and practice of midwifery, although it is doubtful if the course was held any more than the Academical Institution for the Middle Classes, a grandiose scheme which he had already propounded but which failed to secure popular support Much more modest was the actual inception of the school which began in an upper room over Bell's court in Pilgrim-street, and only after this became inadequate moved into the hall of the Barber Surgeons in the Manors Here on Oct 1st 1834 the first session of the school was formally opened Of the five lecturers the most notable described by his colleagues as a very presumptuous young man, became later as Sir John Fife, surgeon to the Infirmary and a man of affairs One of the eight students was John Snow who on two occasions gave chloroform to Queen Victoria and propounded the transmissibility of cholera by water The story of the foundation of the school its early struggles and ultimate success, is told by

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[1] Proc Soc Exper Biol and Med 1933–34 xxix 1093
[2] Quart Jour of Med 1934 iii 341
[3] Amer Jour Med Sci, 1934 clxxxviii 193

Prof Grey Turner and Dr W. D Arnison, with considerable charm and distinction, in a volume[1] issued for the centenary Two of the numerous illustrations in this book are reproduced on page 839, of our present issue, where an account is given of the centenary celebration itself The early years of the school were stormy, for a schism occurred resulting in two rival colleges which were only reunited after the orthodox school had obtained official recognition by the University of Durham , then it was not long before the medical school in Newcastle became so popular as to have more students than the university. Throughout its history indeed the school has been remarkable for the standard of its teaching Durham was the first medical examining body in the United Kingdom to institute a final examination conducted partly (at Durham) by printed questions and interrogation, partly (at Newcastle) by practical exercises in the dissecting room and the laboratory and by the investigation of surgical and medical cases in the Infirmary Those two famous men, Prof. H W Acland and Prof. John Erichsen, examining in 1856, remarked that the test was as severe, thorough, and searching as could well be required.

THE ANÆMIAS

WITHIN the last 25 years pernicious anæmia, a disease of the blood previously fatal, has been brought within the short list of those easily curable by specific treatment. This is an achievement to which many workers in different lands have contributed, and the mass of literature which has grown up on therapy alone has reached unmanageable proportions The concise summary by Dr E W Adams[2] published to-day as one of the reports on Public Health and Medical Subjects issued from time to time by the Ministry of Health will therefore be welcomed. In less than 20 pages he has supplied a readable account of recent researches into ætiology and pathogenesis, the antianæmic principle in liver and stomach preparations, tests for potency of preparations, and the modern treatment of pernicious anæmia by whole liver, by liver extract (oral and parenteral), by gastric tissue preparations, and by other substances Notes on the cost of treatment, on liver treatment in anæmias other than pernicious, and on the response to liver therapy in various types of anæmia conclude the report, to which a list of 70 references is appended. From the practical point of view this summary has one defect—that diagnostic considerations are ignored The indiscriminate use of liver in moderate dosage for all patients held to be anæmic has been too prevalent It may be wasteful both of money and time, not only because some of the anæmias fail to respond to this form of treatment and can be cured by other means, but also because, as Dr S C Dyke points out on another page, in true pernicious anæmia rigorous and intensive treatment is essential, and half-hearted measures may result in the development of nervous complications or even in loss of life It follows that differential diagnosis of the anæmias is of great moment That it cannot be made on clinical grounds, but only by the combination of a number of laboratory procedures, is the message of Dr. Dyke's article, which forms a useful complement to the report on specific therapy issued by the Ministry

EXAMINERS ON THE WING

THE Royal College of Surgeons of England sent representatives to Canada in 1929 and , to Canada and Australia in 1931 to conduct primary fellowship examinations for candidates in those countries This autumn migrant examiners are off to Australasia and India, and on another page we record a preliminary gathering at the Ritz last week Since then the two furthest bound have started on their journey Prof Buckmaster left by P & O on Oct 5th and Mr Gordon-Taylor last Wednesday by air for Batavia, whence he will sail to Sydney. In Australasia they will find 85 candidates awaiting them, 58 in Melbourne, and 27 in Dunedin, and the written part of the examination will be held simultaneously in these centres on Nov 29th and 30th The viva-voce in Melbourne will be conducted from Dec 3rd to 6th, and the examiners will then set out for Wellington and Dunedin, where they arrive on Dec 11th and conduct the viva-voce on the 12th and 13th Prof Buckmaster is expected home at the end of January and Mr Gordon-Taylor about the middle of February Each will be assisted by assessors appointed by the Royal College of Surgeons—in Melbourne Prof F Wood Jones and Prof W A Osborne, and in Dunedin Prof W P Gowland and Prof John Malcolm In India 90 candidates have entered for the examination which begins in Madras on Dec 27th Prof William Wright and Prof John Mellanby, who will be accompanied by Mr. Horace Rew, the director of examinations, are to leave London by air on Wednesday, Dec. 12th, and will arrive at Allahabad on the 18th. From Allahabad they travel by rail to Madras, where they arrive on Dec. 26th Here the assessors will be Lieut -Colonel K G Pandalai, professor of surgery at Madras, and Major S L Bhatia, professor of physiology at Bombay The examiners will leave Madras on Jan 4th, and returning by air from Karachi are due in London on Jan 14th

THE London Medical Exhibition, to which only doctors are invited, will be held in the new hall of the Royal Horticultural Society, Westminster, London, S W , from Monday to Friday next week The exhibition will be open each day from 11 A.M to 6 30 P.M

ESTUARY MUDS AT SOUTHEND-ON-SEA —On Oct 2nd a small establishment for medicinal mud baths was opened at Southend by the mayor, Mr Councillor H E Frith The venture is due to the initiative of Dr Mary Nicol, who has made some study of the medical uses of estuary muds in Germany The mineral analysis of the *Schlick* at Wilhelmshaven and that of the Thames estuary are very similar, both being very rich in silica (60 per cent), alumina, and iron The organic contents and biological properties of these muds have not yet been determined These marine deposits have a general resemblance to the well-known limans of the Crimea, which are now very largely used for rheumatic and other diseases, both in the fresh state at the coast and when dried and transported to the cities, especially for use in the winter months. At a reception in the Clifton Hotel, Dr J R Walker being in the chair, Dr Fortescue Fox congratulated the town on the first attempt to organise the medical use of estuary muds in England Southend, he said, had special advantages as a London health resort, on the "Thames riviera," with its east-and-south climate, its three good elements—shelter, saltings, and sunshine—and the dryest winter climate in Britain. There was great need for small treatment centres at holiday resorts, where natural remedies could be scientifically applied under medical direction Not all holiday makers were quite well, and their time at the seaside gave them a chance for some simple recuperative treatment

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[1] The Newcastle-upon-Tyne School of Medicine, 1834–1934 By G Grey Turner, assisted by W D Arnison Newcastle-upon-Tyne: Andrew Reid and Co Pp 224 10*s*

[2] H M Stationery Office Reports in Public Health and Medical Subjects No 75 Report on Recent Researches upon the Nature and Therapy of Pernicious Anæmia By E W Adams, O B E , M D H M Stationery Office 1934. Pp 22 6*d*

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXII.—PROGNOSIS OF TUBERCULOUS DISEASE OF THE HIP-JOINT IN CHILDHOOD

FOR the prognosis of any disease two things are essential: accurate diagnosis and efficient treatment. In these days of well equipped sanatoria, staffed and visited by men trained in orthopædic surgery, good treatment is easy of attainment; we have travelled far since the days when ambulatory treatment with a Thomas hip splint and a pair of crutches represented the ideal. Diagnosis, however, remains a most difficult problem in non-pulmonary tuberculosis, and the routine examination of cases as they come to a sanatorium discloses many errors. There can be no doubt that hip-joints have often, in the past, suffered prolonged treatment for some condition which has never been tuberculous. Diagnosis is to-day more exact, but even when the radiogram has excluded the more gross errors—e.g., pseudo-coxalgia, coxa vara, and epiphyseal trauma—and when syphilis, hæmophilia and infective arthritis have been considered—there will always be a residuum of cases, aptly called "observation hips," in which diagnosis is doubtful and prognosis uncertain.

Assuming then an accurate diagnosis, what is meant by a good prognosis in tuberculous disease of the hip-joint? I take it to mean recovery with good general health and a joint painless and stable, for preference a bony fusion in the optimum position of function. It is true that a few cases (about 5 per cent.) recover with a fully movable joint. Such a recovery, welcome as it is, must I think cast considerable doubt on the original diagnosis. Full recovery is at least unlikely in a joint where the synovial membrane has been replaced by tuberculous granulation tissue and the articular cartilage ulcerated and in part destroyed. Recovery with fibrous union and limited movement is common in cases not subjected to operation in young children and in those who have not developed cold abscess. Such union is apt to prove irritable or painful on exertion, and these joints are liable to serious osteo-arthritic changes in later life.

From an economic standpoint the hip, like the knee, which is fused by bone rather than fixed by fibrous tissue, is the more useful. Although obviously limiting the more strenuous sports and pastimes, the resultant disability is much less than one would expect, owing to the development in the lumbar region of a compensatory mobility such as that which is found on either side of a fused gibbus in tuberculous disease of the spine. Such compensation is more easily obtained and is of greater range in the younger patients.

The usefulness of a fused hip is well shown by the excellent results nowadays obtained after an operative fusion of the hip-joint for osteo-arthritis. In social life, indeed, a fused hip is probably less of a handicap than is a fused knee, whilst as regards wage-earning the fused hip does not, in most trades, constitute a serious disability. I saw recently three of my patients who had recovered in childhood with a fused hip—they had been working for several years respectively as bus conductor, motor-van driver, and brewer's drayman.

Prognosis therefore involves two things: survival of the patient and recovery with a useful limb. It is this recovery of social and economic activity which is, after all, the main part of prognosis in this condition; the outlook as regards life is never very grave, but the functional result may, unless constant care be taken, prove disastrous. Unremitting vigilance is required to ensure that the joint shall heal in a position of slight flexion and abduction with neither inversion nor eversion and with as little real shortening as may be possible. The affected limb must never be allowed to fall into a position of adduction and inversion with pronounced flexion. This result, which even to-day is occasionally seen, leads to much crippling and may call for treatment by osteotomy. I am not here concerned with the problems of fixation. Different surgeons will use different methods and will obtain equally good results if they have corrected all initial deformities and have taken steps to maintain the optimum position during the appropriate period, seldom less than two years. During this time the movement of neighbouring joints and the muscular condition of the limbs must be carefully safeguarded.

The course of the case is generally watched by *radiograms* repeated at intervals of three months. These are essential to show the grosser changes of destruction or recovery, but too much stress should not be laid on the finer points. No attempt should be made to infer healing and recalcification on the basis of slight radiographical changes; I have often been disappointed on opening a hip-joint to find that its condition was not nearly so good as had been inferred from the radiogram.

Experienced surgeons will find more help in making a prognosis from *clinical observation*. A normal, level temperature, gain of weight, appetite, and colour with increasing energy and intolerance of restraint are the best pointers to recovery.

The formation of an *abscess* does not, nowadays, evoke as much fear as it did. Provided the abscess is skilfully handled by aspiration or expression, this complication can usually be overcome. In one respect the formation of abscess may even be welcomed, since its incidence usually means an ulceration of joint surfaces so great that when healing does occur it will be a sound bony fusion.

I have not found that the look of the child is of great value in prognosis, but some attention should be paid to the *age of onset*. The younger the child, the more likely is the local disease to show a rapid progress; decalcification proceeds apace, abscesses form early and increase quickly, but given adequate treatment, recovery is often equally rapid and complete.

Most of the treatment in this country has hitherto been on non-operative lines. It must, however, be admitted that the functional result so obtained is sometimes bad, the joint remaining unstable and irritable. The question of how far the prognosis may be improved by *open operation* is still a matter of active dispute amongst orthopædic surgeons. My own view is that whilst operation should not be done in children under 10 years of age and should be used very sparingly in the first year of the disease, there are many cases in older children which are hanging fire and these can be substantially benefited by some form of extra- or intra-articular graft. My preference is for an intra-articular graft derived from the upper end of the femur. The operation is simple and safe, and can do much to ensure a stable joint in good position In trying to give the conclusions I have reached on prognosis in this condition I have avoided statistics, they are notoriously difficult to interpret in relation to tuberculous disease, where the variables include climatic conditions as well as efficiency of treatment, and the personal equation of the surgeon as to what he is pleased to consider a cure The following remarks must therefore be read as applying to the practice of one who has for 30 years been engaged in the treatment of non-pulmonary tuberculosis in a smoky industrial city of the north, the great majority of the cases having been treated in a hospital not more than four miles from the centre of the town Such conditions, with their absence of heliotherapy, cannot be compared with those available on the shores of the Channel or in certain centres on the Continent The outlook for non-pulmonary tuberculosis is less good in the north of this island than in the south, unfortunately no method of ultra-violet radiation can replace the light of the sun

On the whole it may be said that tuberculosis of the hip does constitute a definite, though not very grave threat to life During 30 years the deaths from acute dissemination in cases under my observation have shown a steady average of 2 per cent During the earlier part of this period the death-rate was high, reaching as much as one in seven Many cases were formerly admitted with infected sinuses, and even with early amyloid disease, this latter now so rare as hardly to be worth mentioning. In recent years, owing to earlier diagnosis and more efficient treatment, prognosis has improved, and if cases discharged as "apparently cured" are followed into adult life the deaths, directly or indirectly attributable to the disease, will be found to be under 10 per cent. A certain number of the older patients die from pulmonary tuberculosis, the actual cause of death being often a terminal infection of the kidneys

The prognosis as regards function is good. I have found the great majority of my former patients engaged in active and sometimes arduous work. It must, however, be remembered that under conditions of bad environment and ill-health old-healed sinuses may reopen Moreover, owing to the limitation of activity, some of these patients, especially the women, tend towards middle life to become too fat and heavy with inevitable increase in their invalidism Finally, I would remind all those concerned that in spite of the mass of work done in the attempt to devise exact laboratory tests based on the various contents and reactions of the blood-serum, no reliable guide to prognosis in tuberculous bone infections has as yet emerged. Prognosis must therefore still be a matter of personal impression and experience, and in any given case is liable to error.

E. D. TELFORD, B Chir, F R.C S,
Professor of Surgery, University of Manchester

OPENING OF THE MEDICAL SCHOOLS

LAST week we published parts of five addresses delivered on Oct 1st at the opening of medical schools in London Passages from two further addresses appear below. Mr. Fagge spoke at Guy's Hospital on Oct. 3rd, and Prof. William Wright (whose speech is reported) at the Royal Dental Hospital on the 5th

DARE QUAM ACCIPERE

BY C H. FAGGE, M S
CONSULTING SURGEON TO GUY'S HOSPITAL

COMMITTEES under the ægis of various important bodies are attempting to deal with the difficult problem of the medical curriculum. Hitherto, escape has been found by allowing the medical course to encroach more and more upon the school period Whatever may be the outcome of the deliberations of the curriculum committees, it is my earnest hope that no predatory hands will be further laid upon the school period which is, in my judgment, already overweighted In an endeavour to give students the chance of learning something of everything in medicine and its allied sciences, may we not lose sight of the importance to the doctor of general education.

It is difficult to know what qualities, what type of knowledge, what gifts ensure success in general or consulting practice, but surely Osler was pretty near the truth when he wrote, "In no profession does culture count for so much as in medicine, and no man needs it more than the general practitioner, working among all sorts and conditions of men, many of whom are influenced quite as much by his general ability which they can appreciate, as by his learning of which they have no measure"

The chief effect of pushing the premedical subjects further and further forward into the school period has been to deny to the embryo doctor in his most receptive years a nodding acquaintance with the classics and a real appreciation of the lessons of history I maintain that these are serious blots upon his education as a citizen and as a doctor; not because I have any desire that every medical student should know the date of the Battle of Waterloo, but because knowledge of languages, and of nations, provides, in my judgment, the soundest basis for learning in its widest sense

It has been said that "a medical education ought to be as efficient an equipment for public life as any other" The call to men of culture and refinement to take their part in public life was never louder, never more insistent than it is to-day when, in all parts of the Empire, the uneducated, through the power which increasing ranges of suffrage have given them, threaten even national existence by ignoring primary economic principles As a profession we have been too prone to escape from such obligations by asserting either that their performance was impossible owing to urgent calls, or that politics should have no part in a professional man's life. But if we claim to possess in medicine brains equal, if not superior, to those of the Bar and of other professions from the ranks of which politicians are mainly recruited, have we any right to deprive the State of help which our leaders can offer in advice and direction? Though to every one is not given the opportunity or perhaps the temperament for public service, there is no need for any medical man wishing to take part in some form of non-professional work to step into municipal or political life There is in every town so great a need of willing workers, to run medical societies, edit medical journals, or to administer benevolent funds, that no one can excuse himself of a duty which I submit each one of us owes to the State and to his profession, on the grounds that no opportunity exists for the exercise of such activities.

Two years ago I paid a typically American visit Australia and New Zealand. The two characteristics the peoples of these Dominions which most npressed themselves upon me were their intense nd universal imperialism and their regard for adition, coupled with a longing for the traditions the old country.

Well, Guy's teems with traditions. These are the nackles which she places on each one of us as the rice, and at times the heavy price, of being allowed ithin her gates. These we have to live up to or at ast have to make a reasonable attempt to do so. ow I am not sure that the inhabitants of the newer ountries are happy in envying us our traditions. s I told them on one occasion, they should bear in ind the retort of the aged Marshal of France, Pierre efèbvre, when twitted upon his origin by some of he scions of the old nobility at a banquet given in is honour by Napoleon: "You are descendants; I am an ancestor!" So I tried to reassure my ustralian audience that they were perhaps happier being able to create their own traditions and stablish their own schemes of town planning and rchitecture.

The present day Australian, and the New Zealander o less, is an out and out imperialist, and the needs, emands, privileges, and duties of the Empire and its itizens are in these Dominions the topics of everyday onversation. How often does one hear the Empire nentioned in this country, save as a catchword in lection addresses?

If I leave you no other thought worthy of subsequent meditation, I would impress upon each one of ou the urgency of the opportunities which now xist of taking hold of the outstretched hands of our rothers "down under." Such chances, if now corned, may not occur again. If the British Empire an be brought into complete accord it should be a orce in the world for good inestimable. There are everal small ways in which each of us can help this roject which needs no government subsidy. They esire sympathy and affection; gestures of friendly eeling are of more value than financial benefits.

Each New Zealand medical student spends a year n clinical work at one of the four medical centres—Auckland, Christchurch, Dunedin, or Wellington—and fter graduation at the end of a six years' curriculum ften seeks wider clinical experience in other countries, usually in England. Would it not be equally of dvantage to every English graduate to spend six r twelve months after qualification in the Dominions, eeing other hospitals, sampling their teaching, and y a sympathetic interest in their problems doing omething to strengthen their attachment to the nother country? Once established in practice or in ome appointment, travel is impossible; therefore, f you can, immediately after qualification seize the hance of a *Wanderjahr* and study some part of the mpire first hand. By financing such a scheme one of our wealthy imperialists might establish an undertaking capable of results scarcely less important than those which have been the outcome of the vision of Cecil Rhodes.

The meaning of imperialism to the individual is at once apparent if we embrace Curzon's definition of it as "a sense of sacrifice and the idea of duty." Unless a man is prepared for much unselfishness he should not enter our profession, so every medical man should be a keen imperialist and happy in his sacrifice.

* * *

We are inclined to think chiefly of what we may get out of Guy's, but do not suppose that in your transactions with your alma mater, her motto will prove to be all give and no take on her part. From the moment you enter the Dean's office and sign your name in one of his large books you have sold your soul to Guy's, a most exacting mistress, who quite persuades her children that every demand she makes upon them is for their good and pleasure. Yet no one of us, enslaved by her for many years, would, if we could, be freed of the chains which bind every Guy's man, in whatever part of the world he may be found, to the service of the sick and the love of his hospital. So if it be true that "service is the key to happiness" need one look further for the reason why most of us are so happy at Guy's?

THE SUCCESSFUL MAN

By William Wright, D.Sc., F.R.C.S.

PROFESSOR OF ANATOMY IN THE UNIVERSITY OF LONDON, AND
DEAN OF THE LONDON HOSPITAL MEDICAL COLLEGE

What does one really mean by success? Some may think of success in terms of great professional distinction, some in terms of large possessions. Personally I like the definition of the successful man which was given many years ago by Plato: the man who, when it becomes his time to depart, leaves "with the goodwill of all, with goodwill to all, and not devoid of hope." Through my whole life I have always regarded that definition as embodying the best type of success, one which owes nothing to fortuitous circumstance and which is within the grasp of everybody.

How can this success be attained? Two important steps towards it are the retention of your individuality and the cultivation of your personality. To retain your individuality is not an easy thing in these days. The great rush of life, the large mass of interesting information which is pressed upon us, the short time which is given for thought and reflection, all have a deadening effect, and it takes some effort to retain such individuality as we have. We tend to slip back, to become members of the common herd. We may retain our individuality by refusing to do many of the things which we are asked to do. We must refuse to be rushed; we must be selective as to the information which we receive; and lastly, we must insist upon having a certain time for thought and reflection. If we do these things we can preserve our individuality; if we do not, we are in danger of losing it; and if you lose your individuality you lose the most interesting and precious possession that you have. Anyone who, in the later years of life, has to take his opinions from other people has become spiritually dead.

The cultivation of the personality is a matter of education. Theories are held by certain people that heredity is everything and education nothing. On the other hand some people think that education is a good deal and heredity not so much. Not to believe that education can do something is the negation of all effort. We must assume that education can do something, but how much is another matter. Although education goes on through life, there are certain periods when it is more active. The education which you get at the public school is almost trifling. What you get—and it is very important that you should get them—are the instruments for educating yourself. You learn the alphabet in many sciences and arts. You are started in the principles of education. But that you receive much education according to my definition, I doubt.

On leaving school you go to your medical college, and there the claims made upon your time—the development of technical skill and the acquisition of professional knowledge—are so great that there is little time for education It is only when the doors of your professional school close upon you that your education really begins Your personality, which has been enchained for very many years, is now given to you yourself, free and unfettered, and the question is . what are you going to do with it? The reply, surely, is that you should cultivate it.

How can it be cultivated? First, by the study of nature For many thousands of years man has been in intimate contact with nature He remained so almost up to the middle of last century, when the present wave of industrialism swept people into the cities It would be surprising if that long experience had left no impression upon him, if there were no close relationship between man and nature. Nature, not the tenderest, not the most sympathetic of teachers, is still the oldest, the wisest, and the best All the important facts of life can be learnt from the study of nature But with nature, as with everything else, it is a case of knock and it shall be opened, seek and you shall find You have to go to nature with knowledge, confident that knowledge will beget interest and interest beget love When you have done all those things, you will find that you have come to community with nature, and you will get a heart's ease and a philosophic calm which I do not believe you can get in any other way You must frequent the mountains and the sea, and occasionally frequent them alone; you must study nature in all her moods —tempestuous, calm, smiling, and sullen—in order to reach this communion with her This I believe to be the best way of qualifying, in the Platonic sense, as a successful man

Another way in which your personality can be cultivated is by the study of good literature. I say "good" literature, because great discrimination is required—particularly at the present time, when so much literature flows from the press Nearly 300 years ago a great English writer of prose said "He that perpetually reads good books, if his parts are answerable, will have a huge stock of knowledge." If you discriminate between the superficial and the deep, the ephemeral and the lasting, and avoid particularly books about books, you can get a very large stock of knowledge I have found particular interest in the reading of history in associating archæology with it I have also found great pleasure from the study, now and again, of an author or a period intensively, so as to live with him, gain his companionship, and see his point of view on many of the decisive matters of life, or obtain so vivid a picture of the period that you may walk, for instance, in Leicester-square, with familiar ghosts such as Hogarth, Isaac Newton, John Hunter, and Joshua Reynolds You might think that whoever followed this advice would become a stodgy sort of person, and something of a recluse I do not see why, occasionally, you should not—to adopt Horace's phrase—"desipere in loco" You will have no lack of incentive to that kind of reading, but I beg you to give the more classical solid type a chance Another practice I have found of advantage is the memorisation of verses, like some of the passages of Shakespeare or the sonnets of Milton and Wordsworth In troublous times you may get very real help from the remembrance of these little "ends of verses," or of incidents, such as the old Saxon's description in Bede's "Ecclesiastical History" of man as a bird that flies from the nigh into the warm, lighted hall and after a short spac flies out again through another door into the dark, the reply of the Spartan who, when told at Thermo pylæ that the shafts of the Persians were so numerou that they would obscure the sun, retorted "Then w fight in the shade"

Lastly, nothing is more potent in the cultivation o personality than friendships. In an old Icelandic poem one of the oldest poems in European literature, are told that if you have a friend you should vi him often, for the road will be grown over with gra and bushes quickly spread over it if it is not frequentl trodden. You should regard a friendship as a ver valuable asset, and see that you fulfil its obligation Goethe says · "When you have a friend, do what yo can for him, it will be a bitter thought, when you him cold and stiff, to think of the things which might have done"

I will close with a statement of fact, and then wi a warning. The fact comes from Omar Khayyam—

> "Whether in Naishápúr or Babylon,
> Whether the cup with sweet or bitter run,
> The wine of life is oozing drop by drop,
> The leaves of life keep falling one by one"

The warning is from what is perhaps the mo important and valuable address that was ever give to students · that of Carlyle when he was rector o the University of Edinburgh Carlyle, warning th students of the importance of taking a serious view o things and of paying attention to the great thought of the past, concluded —

> "Heard are the voices,
> Heard are the sages,
> The worlds and the ages
> Choose well! Your choice is
> Brief, but unending"

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK END

SEPT 29TH, 1934

Notifications—The following cases of infectio disease were notified during the week Small-po 1 (Long Eaton U D, Derby), scarlet fever, 293 diphtheria, 1374; enteric fever, 28; acute pneumon (primary or influenzal), 497; puerperal fever, puerperal pyrexia, 116, cerebro-spinal fever, acute poliomyelitis, 31, acute polio-encephalitis, encephalitis lethargica, 10; continued fever (Wandsworth), dysentery, 11; ophthalmia ne torum, 92 No case of cholera, plague, or typh fever was notified during the week.

The number of cases in the Infectious Hospitals of the Lond County Council on Oct 8th–9th was as follows Small 2 under observation, scarlet fever, 1617, diphtheria, 15 measles, 246, whooping-cough, 238, puerperal fever, 18 moth (plus 8 babies), encephalitis lethargica, 269, poliomyeliti "other diseases," 273 At St Margaret's Hospital there were babies (plus 11 mothers) with ophthalmia neonatorum

Deaths—In 121 great towns, including Lond there was no death from small-pox, 2 (0) from ent fever, 5 (1) from measles, 6 (0) from scarlet fev 6 (0) from whooping-cough, 41 (9) from diphther 50 (18) from diarrhœa and enteritis under two year and 17 (4) from influenza The figures in parenthes are those for London itself

Acton and Leeds reported the two deaths from enter Fatal cases of diphtheria occurred at Leeds, Liverpool, Ma chester each 3, Dagenham, Portsmouth, Bootle, Rhond each 2 Liverpool reported 6 deaths from diarrhœa, Leeds a Middlesbrough each 3

The number of stillbirths notified during the week wa 254 (corresponding to a rate of 40 per 1000 tota births), including 40 in London.

POST-GRADUATE LECTURES

CONTINUING our series of lectures lately given to ld students of London teaching hospitals we publish this week summaries of those delivered at King's College Hospital by Dr Firth and Mr Gilliatt

THE MANAGEMENT OF DISEASE IN OLD AGE

(DR DOUGLAS FIRTH)

THE first question which arises is whether the patient should be put to bed, and save for certain specific illnesses the answer is emphatically NO Acute toxic conditions, as lobar pneumonia, or cardiac crises, as coronary infarction, call for the restraint of bed, but chronic conditions, as bronchitis and the broncho pneumonia which unfortunately is often the sequel to it, do badly when put to bed Confinement to a suitably warmed room in an armchair is usually sufficient, provided the nursing is competent

The physical reasons against bed are weighty The risk of hypostatic pneumonia is well known, but I do not think the rapidity with which the aged develop bedsores is sufficiently appreciated Prevention is better than cure, so if confinement to bed is considered necessary, it is better to get the reputation for being over fussy and put your aged patient on an air-ring or water bed without delay, possibly with heels and elbows suitably padded, rather than be met after 48 hours with the doleful news that all is not well over the pressure points

But there is another and perhaps more important reason for the avoidance of bed and that is the psychological state of the patient Regression accounts for the phenomenon of second childhood, and like children the aged are easily and illogically frightened Past experience associates retirement to bed with serious or fatal illness, a thing they have seen again and again during a long life Put them to bed and they become filled with nervous apprehension which, unless combated by the doctor in charge, rapidly degenerates into profound depression and the loss of the essential will to live

Strange as it may seem, the majority of senile patients cling to life and fear death although this fear commonly disappears shortly before death itself, when it is regarded as a welcome release Many of you will remember William Hunter's last words "If I had strength enough to hold a pen I would write how easy and pleasant a thing it is to die"

Therefore the will to live and the hope of recovery must be encouraged and the loss of self restraint and self respect met by a cheerful optimism on the part of the doctor in which mild jokes cheerful chaff, and the avoidance of sympathetic condolence all play their parts Remember we are dealing with second childhood when the old adage 'little things please little minds" has again become true and if the aged are easily upset they are, like children, easily reassured and comforted by those in whom they have placed their confidence But you can only jest in this fashion with elderly patients when you know them Again, like children, they often resent what seems to them familiarity at an early stage of acquaintance

Trained assistance should be procured early the efforts of the family or trusted maids lead only too often to irritation or worse, failure to carry out essentials of nursing which may seriously prejudice the course of the illness Again and again we hear the complaint *"Mother will not do as I ask her"*

When possible a censorship should be imposed upon visitors! The Mrs Gummidge type are better forbidden altogether for they can in a few moments reduce an elderly patient to gloom and despair, and exaggerated as the type described by Dickens may seem, it does exist In any case the number of visitors and the duration of their visits should be limited, for concentration is impaired and mental fatigue easily induced in the aged, but at the same time it is wise to allow selected visitors under suitable restrictions, for they provide a valuable source of interest in an otherwise dull day and have a tonic effect

The question of sleep is often a problem, as age increases, in the absence of interest to fix the attention, cat-naps become more common and nights more broken—really an exaggeration of the usual interrupted sleep of the aged which is less continuous than in younger persons In addition the interruptions of sleep appear to be much more serious than they are, in number and time, so that complaints of bad nights may be frequent, and unfounded If possible hypnotics should be avoided, the usual general measures being employed Leonard Williams considered that the bromides, drugs commonly used, were definitely contra indicated as likely to give rise to mental confusion, and if persisted with to produce vascular thrombosis and impairment of the mental powers, even with a normal dose

Bedsores, to which I have already alluded, are not the only unpleasant surprises which may arise during the nursing of an aged patient Diminished resistance to infection and arterio sclerosis so impair the vitality of the tissues that even a slight trauma such as close cutting of the toe nails may be followed by gangrene Rolleston refers to the blunting of sensibility to pain in old people as a beneficent process, but it also brings some dangers, therefore the nurse should be warned to exercise the greatest care in the use of hot bottles, poultices, and Thermogene wool moistened with spirit, for burns occur on the least provocation Not only this, but any breach of surface, owing to lack of resistance, carries a great risk of erysipelas, and the prognosis of this complaint is very grave at the latter end of life

The management of the gastro intestinal tract calls for comment The majority of the aged are edentulous or have only a few teeth left and those in bad condition, and it is surprising how they cling to them This, with atrophy of the walls of the stomach and the lessened activity of the secretory glands is a common cause of dyspepsia, which is intensified during illness In the intestines, diminished secretion and loss of tone account for the constipation which afflicts the aged Hard scybalous masses can often be detected on abdominal examination and many of us can recollect patients who assure us that the bowels are open regularly, or who even have diarrhœa and yet when suitable measures are taken quantities of scybala are removed If this is so when the aged patient is in good health it is not surprising that the care of the bowels during illness becomes an important item

Should confinement to bed be deemed wise, I would plead for the more general use of the commode in place of the bedpan Many of us know from personal experience the deterrent influence of the bed, an The discomfort and the difficulty in starting an act [illegible] leads to great efforts and I think in many cases less strain is thrown upon the senile heart by getting out and using a commode under careful supervision than will follow straining on a bedpan Even the simple fact of being allowed to get out of bed has a psychological value

Purgatives supply one of the few exceptions to the rule that in old age the dosage of a drug should be diminished Provided piles are not present, the old-fashioned aloes and nux vomica pill is good, but as absorption is so slow in old people, it should be given as an after-dinner pill. Paraffin is very useful, but beware of seepage. It is not so easily noticed or promptly controlled in the aged, and may be such a nuisance as to render the use of paraffin inadvisable Still with small doses this can usually be avoided, and a useful combination will be found in a drachm each of liquid paraffin and liquid extract of cascara, once or twice daily. These doses should be sufficient, for purgation is not desirable in old people The more severe forms of constipation are better treated by enemata of soap and water, and it is a useful routine measure to give one twice weekly When scybalous masses are present and difficult to remove, a warm olive oil enema of 2–8 oz. given overnight and retained and followed by the usual enema saponis in the morning will usually produce the desired result.

Meteorism is not an uncommon abdominal complication amongst old people and is a serious one. Injudicious diet is the usual factor, so whatever the illness the amount of milk must be carefully controlled. At the onset of the distention give water, glucose, and whey only by the mouth, apply hot stupes to the abdomen, and, assuming the absence of obstruction, give eserine salicylate gr 1/100 subcutaneously every hour for four doses, and if this is ineffective, an ox-gall enema, fel bovinum purif. $\frac{1}{2}$–1 drachm in one or two ounces of water If ox-gall cannot be obtained asafoetida or rue are substituted; 2–4 drachms of the tincture of asafoetida in 4 oz. of mucilage of starch or ol. rutæ ♏30, emulsified in 2 drachms of mucilage and added to 6 to 10 oz of enema saponis

Those drugs which are apt to cause constipation, as iron, bismuth, and preparations containing tannin, for instance cinchona, are better avoided; and the same caution applies to morphia The use of this last drug calls for much judgment and indeed it has been said to be definitely contra-indicated, not only for the constipation which it produces, but also for that markedly depressant effect on the cough and respiratory centres which may accumulate or precipitate the broncho-pneumonia to which the aged are so liable. But in the presence of persistent pain or incessant cough, and in the absence of the only contra-indication which, to quote the words of Lord Dawson, is a "generalised bronchitis with exudate blocking the tubes," sufficient should be given to remove the discomfort and allay the misery.

I would even advocate the use of small doses—and only small doses are needed—to produce euphoria when nervous apprehension has reached a marked degree, especially in cardiac cases One suggestion I would make, and that is that Nepenthe should be ordered rather than tinct opii As far as I can see the preparation contains roughly the same amount of morphia, and administered in the same dosage, but should the prescription be seen by the patient—and it is queer how many prescriptions do find their way into the aged patient's hands—or by members of the family, its nature is unrecognised and the suggestion of doping is avoided.

In conclusion, I would venture to say that the three most important points in the managemen disease in old age are · the avoidance if possib confinement to bed, and if this is not possible realisation of the dangers "bed" entails, atte to the psychological aspect, especially the encou ment of the will to live; and lastly, the care o gastro-intestinal tract.

INDICATIONS FOR THE USE OF FORC

(Mr W. Gilliatt)

The indications for forceps are, widely spea any conditions which delay the second stage of la when it is desirable in the interest of the moth of the child that delivery should be completed second stage of labour presumes full dilat of the cervix.

Certain postulates must be fulfilled before fo can safely be applied. The first is full dilatatio the cervix—or in cases of extreme urgency, dilat *to three-quarters or four-fifths* The *second* is presence of pains In primary uterine in the pains have been poor in character and at intervals throughout the first stage, in the se stage forceps delivery is good treatment secondary uterine inertia or uterine exhaus where the pains once good have disappeared, forceps should not be applied until they reap Thirdly, the pelvis must be big enough to tra the child alive so that the head is not damaged passage. Fourthly, there should be anæsth for when a woman is lying quiet and cannot w about the bed or move after application of the fo asepsis is more likely to be satisfactory. It is he to have an anæsthetist, though it may not al be possible. The fifth postulate is that an e bladder is of great importance, for injury to bladder does not occur when it is empty, b very likely if it is full It is a good practice to the blades of the forceps tied together by a r catheter, this rule cannot then be forgotten lastly, puerperal sepsis is to be avoided by preparation of the vulval and perineal region the use of sterile towels to shut off the rest o patient and the delivery table or bed, by sterilisation of all instruments, and by the pre tion of the person of the accoucheur as for a su operation.

All drugs which relieve the pain of labour te slow the uterine action and render the use of fo more frequently necessary. Some anæsthetic this to a marked extent, a fact which is not in fa of their indiscriminate use in the relief of pain anæsthetics, gas-and-oxygen interferes with the ut action least of all, chloroform, on the other hand, down the uterine action most of all. In our ward we are using, with good effect, Minnett's ap tus by which the patient can give herself a mixtu nitrous oxide gas and air

Persistence of occipito-posterior presentation common and a cause of great trouble and of maternal morbidity and fœtal mortality In last four years in the maternity ward here fo were applied for this condition between 2 5 per and 3 per cent. of the whole of our admissions presentation is more often seen in the primigra than in the multipara and it is commoner in than the text-books say—about 40 per cent occipito-posterior presentations 90 per cent 95 per cent of cases have sufficient flexion of head to rotate to an anterior position In remainder, however, there is insufficient flexion orehead rotates forwards carrying the occiput vards

cipito posterior presentation is diagnosed by minal palpation, the flat back of the child is elt and the forehead is much more easily felt as n front instead of at the back The fœtal heart eard in the flank instead of 1 in from the licus In the course of labour it is sometimes ble to foretell what will happen on making ginal examination if the cervix is sufficiently ed to admit a finger and the posterior fontanelle t, this is evidence of flexion of the head, and in a case the occiput will rotate to the front If anterior and posterior fontanelles are felt it is ence that the head is less well flexed, but still large proportion of these cases forward rotation ne occiput occurs Where the anterior fontanelle is felt, it is evidence of still less flexion and ward rotation of the occiput is more likely to r If in the second stage, where the cervix is dilated, there is delay and on examination the rior fontanelle is found in front, the diagnosis occipito posterior presentation can be made he woman has been in labour long and the anelles are obliterated by the formation of a ut, the hand should be passed above the baby's l and the ear felt in order to recognise the position he occiput

he treatment is to rotate the occiput forward nually and complete delivery by applying forceps esthesia is necessary and the rectum and bladder uld be empty It is essential to carry out the ne strict technique in the prevention of puerperal sis as described for the application of forceps e whole hand should be passed into the vagina, head grasped and the occiput rotated to the front manipulation can often be made easier by an istant rotating the child's body in the same direction manipulation on the abdominal wall The nœuvre is often difficult The head sometimes ds to slip back, when this happens one blade of the ceps should be inserted before the hand is removed it will act as a wedge and prevent spontaneous ation backwards The forceps having been applied th the occiput in a forward position the child should en be delivered Failure to rotate the head by s means may occur, and it may be necessary to ss the hand above the child's head and turn the oulders in the required direction This may but es not usually fail, should it do so two courses e open first, to apply forceps and deliver the ild as a persistent occipito posterior, secondly, attempt rotation of the head by means of the rceps Rotation of the head by means of the rceps is a manœuvre which is not free from risk, is only safe when the head is low in the pelvic vity and short straight forceps can be used When e head is high long curved forceps have to be used nd there is a probability of tearing the maternal soft rts

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg Comdrs I Moxon Browne and N B de M reenstreet to *President* for Medical Department dmiralty, A C Anderson to *Victory* for Haslar Hospital, nd A C Shaw to *Tamar* for R N Sick Quarters Wei ai wei

Surg Lt Comdrs T G B Crawford to *Neptune* N Barnes to *Drake* for R N B and to *Berwick* (on re- ommg) and T A Cochrane and G D I Hall to *President* or Medical Department, Admiralty

Surg Lt Comdr H W Strong withdraws with gratuity

Surg Lts S R G Pimm to *St Angelo* for Malta Hospital, and E B Bradbury to *Pembroke* for R N B

Surg Lt (D) J C Benson to *Medway*

ROYAL NAVAL VOLUNTEER RESERVE

Surg Lts J C Livingston to *Victory* for Haslar Hospital, and E C Johnson to *Excellent*

Proby Surg Lt T H Pierce to be Surg Lt

ARMY MEDICAL SERVICES

Col J Heatly Spencer, O B E, by virtue of his appointment to the chair of tropical medicine at the R.A.M. College and consulting physician to the Army, becomes a member of the Army pathology advisory committee

ROYAL ARMY MEDICAL CORPS

Lt -Col C H Denyer, M C having attained the age for retirement, is placed on ret pay

Maj E U Russell, M C, to be Lt Col

Maj F C Atkinson Fleming, M C, retires on ret pay

REGULAR ARMY RESERVE OF OFFICERS

Lt Col R K White, D S O, having attained the age limit of liability to recall, ceases to belong to the Res of Off

ARMY DENTAL CORPS

Lt C A Pank to be Capt

MILITIA

Maj C S Sandeman retires on attaining the age limit, and retains the rank of Maj

TERRITORIAL ARMY

Lt Col G J Linklater, O.B E, to be Bt Col.

T A L Davies (late Offr Cadet, Univ of Lond. Contgt (Med Unit), Sen Div, O T C) to be Lt

Supernumerary for service with the O T C.—E Shipman (late Cadet Staff Serjt, Univ of Lond Contgt, Sen. Div, O T C) to be Lt, for duty with Med Unit Univ of Lond Contgt, Sen Div, O T C

Capt C E W Bower to be Maj

Lts D S Valentine, G W Molyneux, R A P Gray, D M Mitchell, J D Finlayson, R K Reeves J B Fulton, and M L Formby to be Capts

TERRITORIAL ARMY RESERVE OF OFFICERS

Lt Cols G W Craig and W Archibald, T.D., having attained the age limit, retire and retain their rank, with permission to wear the prescribed uniform.

Maj C A Pannett, having attained the age limit, retires and retains his rank, with permission to wear the prescribed uniform

Capt J N C Lord, from Active List, to be Capt

ROYAL AIR FORCE

Flight Lt J J Corcoran is transferred to the Reserve, Class D

Flight Lt (Hon Squadron Leader) J G Skeet relinquishes his temporary commission on completion of service and is permitted to retain the honorary rank of Squadron Leader.

INDIAN MEDICAL SERVICE

Lt Col (Bt Col) G D Franklin, C I E, O B E, retires

COLONIAL MEDICAL SERVICE

The following appointments have been made Dr C Bowesman, Dr [illegible] Creger, Dr P C Co[illegible], Dr W M Quin Dr H G H Waters and Dr W [illegible] Williams [illegible] Medical Officers, West Africa, R [illegible] Dunlop Medical Officer, Uganda Dr [illegible] Irwin and Dr [illegible] Medical Officers [illegible] Dr P P [illegible] Medical Officer, Somaliland [illegible] Beer, District Medical Officer, St Lucia, [illegible] Mrs C B [illegible] L M O Wall, [illegible] Malaya

Dr J S [illegible] has been appointed Adm[illegible] Agent for [illegible] Dr L A [illegible] Seab[illegible] and Dr W Kelly for [illegible]

SPECIAL ARTICLES

THE DIFFERENTIAL DIAGNOSIS OF THE ANÆMIAS *

By S C. Dyke, D.M Oxon, F R C P. Lond.
CONSULTING PATHOLOGIST, THE ROYAL HOSPITAL, WOLVERHAMPTON

To define what is meant by anæmia is not altogether easy; literally, the term may be taken to indicate a shortage of blood but there is no type of anæmia in which the volume of the circulating blood is significantly diminished The red cell content of the blood is no sure criterion; there are several types of anæmia in which the number of red cells per c mm may be almost or even completely up to normal with a coexisting anæmia of considerable severity In assessing degree of anæmia it is the hæmoglobin which is the important factor, but if the hæmoglobin percentage alone be considered certain states in which a considerable diminution of the red cells exists along with only slight diminution of the hæmoglobin percentage may escape detection. Anæmia must be defined as a deficiency of the hæmoglobin or of the red cells or of both

Clinically, the differential diagnosis of the anæmias is by no means easy, it is difficult by clinical means alone to diagnose even as between anæmia and pallor without blood impairment Anæmia is a favourite diagnosis among the lay public, particularly among women, and the patient's diagnosis is not infrequently accepted Face colour is no indication of the state of the blood and the tint of the lips little better, something is to be learned from the conjunctivæ but not much; probably the safest purely clinical guide is the colour of the palm of the hand as compared with that of the observer.

For the diagnosis of anæmia examination of the blood is essential Its mere presence can be diagnosed by the simplest form of hæmoglobinometer, the identification of the type can seldom be made short of a complete knowledge of the blood picture.

Thanks to recent work mainly carried out in this country and America and associated with the names of Minot, Whipple and Hurst, among many others, knowledge of the anæmias has increased greatly within the last five years Before the advent of this recent knowledge the differential diagnosis of the anæmias was held to be an easy matter; they resolved themselves into "primary" and "secondary" with the possible addition of chlorosis in a third class by itself. "Primary" anæmia was synonymous with pernicious or Addisonian anæmia and as the condition was incurable it did not greatly matter whether the diagnosis was established or not; all the remaining anæmias other than chlorosis were "secondary." Chlorosis was supposed to have disappeared with tight lacing and the advent of women's suffrage.

The differential diagnosis of the anæmias is now much more difficult than it was in those not so far-off days; it is also much more worth while making since rational, in certain cases actually specific, treatment now exists for many of the anæmias and their identification becomes a matter of prime importance in treatment.

Morphological Classification

The anæmias may be classified morphologically or ætiologically. When only the blood picture is available, as to the hæmatologist working at his la bench, morphological classification only is possible When the patient only is available as to the clinician standing unaided at the bedside, neither is possible Ætiological diagnosis can only be made when patient and blood picture are considered in relation to each other

It is only within the last few years that it become possible even to attempt an ætiological diagnosis, but now it is on this basis that rational treatment must be founded.

On the blood picture alone various classifications are possible; the morphological and ætiological classifications do not run parallel but cut across each other at various places

The basis most commonly used for morphological classification is the size of the red cells.

From this standpoint the anæmias may be grouped into the normocytic, in which the red cells are of normal size, the megalocytic in which the red cells are large and the microcytic anæmias in which they are smaller than normal. Most of the anæmias formerly grouped as "secondary" such as those due to hæmorrhage, sepsis and so forth are normocytic, familial hæmolytic anæmia (acholuric familial jaundice) is microcytic and pernicious anæmia megalocytic.

Classification of the Anæmias

ÆTIOLOGICAL	MORPHOLOGICAL
1 *Due to Loss or Destruction of Red Cells*	
A —By massive hæmorrhage	Normochromic N cytic
B —By hæmolysis— Hæmolytic anæmia (acholuric familial jaundice)	Hyperchromic cytic.
2. *Due to Disturbance of Hæmopoiesis*	
A —From deficiency of factors necessary for hæmopoiesis—	
Pernicious anæmia	Hyperchromic Meg locytic
Anæmia of sprue	Hyper- or normo- chromic. Megalocyt
,, ,, idiopathic steatorrhœa	Hyper- or chromic Megalo microcytic.
Hypochromic anæmia—	Hypochromic Micr cytic
(1) Idiopathic (Witts) (2) Associated with pregnancy (3) "Chlorosis" (4) Of infants	
Anæmia of hypothyroidism	Somewhat Normocytic
,, ,, scurvy.	Somewhat hypochrom- Normocytic
B —By action of deleterious substances— Microbic "toxins", syphilis, tuberculosis, sepsis, &c Chemical poisons—e g, lead nephritis	Hypochromic to varying degree Normocytic
C —From crowding out of the red cell forming marrow by cells of other types— The leukæmias Lymphadenoma The reticulo-endothelioses Malignant invasion of the bone-marrow.	
D —Exhaustion due to small continued hæmorrhages	
E —Failure of unknown causation— Aplastic anæmia	Normochromic N cytic.
Splenic anæmia	

A further morphological classification may be ma on the basis of the hæmoglobin load carried by the red cells

When this load is high the colour-index, which is the arithmetical expression of this load, is also high Anæmias of this type are described as hyperchromic, pernicious anæmia and the anæmia of sprue serve as examples When the hæmoglobin load of the red cells is low the colour index is also low and the anæmia is described as hypochromic, the classical example of this type of anæmia is chlorosis, in which the colour index may fall to 0 25

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* Expanded from an address delivered before the Eastbourne Medical Society on April 24th, 1934

It is unusual in states of anæmia to find no disturbance of the hæmoglobin load of the red cells, when this does occur the anæmia is described as normochromic, the normochromic anæmias tend to grade insensibly into the hypochromic

There are, however, few cases of anæmia in which examination of the blood picture alone unaided by clinical observations will carry the diagnosis very far or help much in the treatment For the initiation of effective treatment ætiological considerations are necessary

Ætiological Classification

From the ætiological standpoint the anæmias fall into two great classes :—

(1) Those due to loss or destruction of red cells, and (2) those due to interference with the formation of red cells (*hæmopoiesis*)

The vast majority of the cases of anæmia met with in practice fall into the second class In subdividing these in the accompanying Table free use has been made of the classification suggested by Dr Janet Vaughan [1]

Anæmias due to Loss or Destruction of Red Cells

BY MASSIVE HÆMORRHAGE

This in ordinary civil practice is not of great importance The great danger from massive blood loss, whether due to trauma or to some morbid condition such as peptic ulcer, is not the resulting anæmia but the catastrophic fall of blood pressure consequent on sudden depletion of the circulating blood and the accompanying "shock" This initial shock may be profound and dangerous, but the actual anæmia associated with it is not necessarily great The patient in a state of shock after a severe hæmorrhage appears so pale and bloodless that it is difficult to believe that the condition is not entirely due to anæmia In such cases, however, examination of the blood often shows a hæmoglobin percentage of not less than 35 per cent or a red cell count not under 2,000,000 per c mm, a degree of anæmia which when of slow onset is perfectly compatible with a comfortable life of somewhat restricted activity

Since the transfusion of blood has become simple and reasonably safe it has become customary to proceed to it as soon as possible in all cases of this sort Usually the results are very good, within a few minutes an apparently moribund patient may be restored to a state of reasonable well being, the blood pressure rises the colour returns, and all signs of shock pass off Examination of the blood in such cases, however will show after the transfusion only a very slight increase in the hæmoglobin percentage and number of red cells per c mm The main benefit appears to be derived not from the substitution of new red cells for those lost but from the increase of the blood pressure For this purpose blood is not necessary, a colloid solution such as gum saline serves equally well

It is true that the infusion of blood serves as a powerful stimulus to hæmopoiesis but in cases of hæmorrhage in previously healthy individuals this stimulus is not necessary the hæmorrhage itself is a powerful stimulus to the same end; a healthy hæmopoietic system after extensive hæmorrhage will restore the blood to normal and something better in from two to four weeks

It is not uncommon to see unsatisfactory blood regeneration after morbid bleeding, particularly from peptic ulcer Usually this means that the bleeding has not ceased, in other cases it is due to failure of the restricted diet to supply the iron and other substances necessary for normal hæmopoiesis Man cannot live by milk alone, not even the man with a duodenal ulcer

BY DESTRUCTION OF THE RED CELLS

Destruction of the red cells within the circulation can be produced experimentally by various chemical poisons, clinically it is seen in malaria and in two congenital conditions closely allied to each other—familial acholuric jaundice and sickle-celled anæmia, the latter occurs only in negroes and has so far not been reported in this country, the former is relatively common The blood destruction in familial hæmolytic jaundice depends on the fact that the red cells are congenitally abnormal, not strictly microcytic, though that is the readiest way of describing them, they are normal in volume but small in diameter, giving a distinctly more dense appearance than normal cells under a microscope Their resistance to lowered osmotic tension is less than normal, being abnormal they are subject to excessive destruction by the reticulo-endothelial system with resulting anæmia and bilirubinæmia The excessive activity of the reticulo endothelial system results in hyperplasia, especially noticeable in its largest collection, the spleen, which may attain immense proportions. Diagnosis is established by the demonstration of the increased fragility of the red cells in the presence of hypertonic saline and by the constant high reticulocyte count; as is well known the results of splenectomy are excellent and lasting

Anæmias due to Interference with Hæmopoiesis

FROM DEFICIENCY OF FACTORS NECESSARY FOR HÆMOPOIESIS

Little is known of the intimate chemistry of hæmopoiesis, but it is evident that it cannot proceed satisfactorily in the absence of certain factors Such are certain minerals, as for instance, iron, copper, and manganese, vitamins, and substances elaborated within the body such as thyroxine and the antianæmic factor of pernicious anæmia

THE DIAGNOSIS OF PERNICIOUS ANÆMIA

Probably no condition is so frequently diagnosed when absent and so frequently missed when present as pernicious anæmia Up to five years ago before effective treatment had come into existence it was a matter of no great moment if it remained undiagnosed, now this is not so Thanks to the work of G R. Minot, W B Castle, and others, a flood of light has been thrown upon the ætiology of this hitherto dreaded malady, a specific treatment has been made available, and "pernicious" anæmia now ranks among the most easily controlled of all medical disorders

Accurate diagnosis has thus become of the first importance and once a diagnosis has been made vigorous and intensive treatment is essential Half measures may result in loss of life, at least they merely serve to allow of the development of the nervous complications, the incidence of which now that death can readily be warded off, is increasing Failure to establish an accurate diagnosis may lead to the application of an entirely wrong therapy It cannot be too strongly insisted that the action of the antianæmic principle is specific for pernicious anæmia and one or two other types only, these being rarely met with in this country, its application to other forms of anæmia can only lead to the loss of valuable time and the waste of material

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[1] THE LANCET 1933 ii 63

The diagnosis of pernicious anæmia is not altogether easy; on clinical grounds alone certain diagnosis is impossible. There has long been current a superstition that any competent hæmatologist should be able to make the diagnosis from the examination of a stained film alone Attempts to live up to this belief have been responsible for certain of the "cases of pernicious anæmia irresponsive to liver." It may be possible to make a guess at the diagnosis from the simple observation of a stained film of the blood but certainty is not possible Blood from anæmia of many types may show the *anisocytosis* and *poikilocytosis* vulgarly supposed to be characteristic of pernicious anæmia and, again, the blood from a case of pernicious anæmia may fail to show these phenomena It is true that in untreated cases the mean diameter of the red cells is greater than in health and that the variation about the mean of their size shows characteristic departures from the normal There are, however, certain other conditions such as idiopathic steatorrhœa and sprue showing very similar peculiarities

Fortunately, although a certain diagnosis of pernicious anæmia cannot be established on anyone laboratory procedure, it can be arrived at by the combination of a number, no one of which is particularly laborious or difficult. For the establishment of a firm diagnosis the following procedures must be employed enumeration of the red cells; estimation of hæmoglobin percentage, calculation of the colour-index; examination of stained film of blood; and estimation of mean diameter of red cells The following procedures are of great assistance and should be employed whenever possible · fractional test-meal and van den Bergh reaction of serum and estimation of bilirubin percentage. None of these procedures are "tests" in the sense in which the word is used by the uninstructed, each one of them is calculated to reveal one or more of the aspects as now understood of the characteristic pathology of the disease.

THE ANTIANÆMIC FACTOR

Pernicious anæmia so far as at present understood depends upon absence or deficiency of the anti-anæmic factor normally resident in vertebrate liver The formation of this antianæmic factor depends upon the interaction in the course of normal digestion of the intrinsic and extrinsic factors of Castle, the former present in the gastric secretion and the latter in certain foodstuffs.

In the vast majority of cases the development of pernicious anæmia appears to depend upon the absence from the stomach of the intrinsic factor; demonstration of this deficiency would at once give the diagnosis. Such demonstration is possible by feeding half a pound of beef steak to the subject under investigation, allowing it to digest and then withdrawing the gastric contents and feeding them to a patient in the remission stage of pernicious anæmia The presence of the intrinsic factor in the gastric juice of the subject under investigation is revealed by a reticulocyte shower in the blood of the known sufferer from pernicious anæmia; its absence by the failure of such a shower to appear Although much research work has been done along these lines, both in this country and in America, this procedure obviously constitutes a somewhat cumbrous method of diagnosis. Fortunately it is unnecessary

Fractional test-meal—Although no simple test for the presence or absence of the intrinsic factor exists, it is a fact, our knowledge of which we owe largely to the work of A F Hurst, that it is very rarely absent if free hydrochloric acid be present or can be made to appear in the gastric juice. A few exceptions have been reported, but for all practical purposes it can be accepted that the patient showing free hydrochloric acid in the gastric juice is not suffering from pernicious anæmia; the converse that all patients showing achlorhydria are necessarily or even probably suffering from pernicious anæmia is very far indeed from being true In the diagnosis of pernicious anæmia, however, the examination of the gastric juice must play an important though negative part The demonstration of free HCl therein may be taken as practically conclusive evidence that the intrinsic factor is also present and that some cause other than its absence must be sought for the anæmia

The intrinsic factor of Castle resides in the gastric juices The extrinsic factor is known to reside among other things in beef steak and in Marmite, but its nature is entirely unknown The interaction in the course of normal digestion of the extrinsic and intrinsic factors gives rise to the antianæmic factor.

The total antianæmic factor is essential for normal hæmopoiesis; if it be deficient, pernicious anæmia will develop and the cure of the disease depends upon the *substitution of the lacking factor.*

The function of the antianæmic factor so far as present knowledge goes is to bring about the maturation of the red cells. In its absence the red cells throughout the hæmopoietic system do not come to complete maturity; being immature they show no *anxiety to leave the safe shelter of their birthplace* in the bone-marrow and when they do find their way into the busy world of the circulation they rapidly come to grief.

Evidence of this rapid blood destruction is provided by the presence of *bilirubin* in the serum in values above those ever found normally. This excess of bilirubin is demonstrated by the *van den Bergh reaction* and as it is due to bilirubin which has not passed through the liver the reaction is always of the indirect type; usually the reaction is strong, sometimes very strong indeed. The absence of a positive indirect van den Bergh reaction is important evidence against a diagnosis of pernicious anæmia

Failure of the red cells to attain maturity results in the morphological peculiarities already referred to. As observed in *stained films* of the blood the red cells are usually variable in size and shape—in hæmatological jargon they show anisocytosis and poikilocytosis, and they are on the average larger than normal Either the Price-Jones curve or one of the modifications of the diffraction method introduced by A. Pijper serve to demonstrate this peculiarity.

Mean diameter of cells—The diffraction (halometric) method is now well known. In principle it consists in using an unstained film of the blood as a diffraction grating, observation of a source of light through such a film shows a series of diffraction rings the size of which varies inversely with the average size of the red cells, various techniques have been devised for this observation, one of the simplest is that described by D. Merlyn Price in THE LANCET (1929, ii, 275), another is the Eve "halometer." This method has its uses, failing a Price-Jones curve it constitutes a valuable aid to the establishment of a diagnosis of pernicious anæmia, it has, however, technical drawbacks, *especially in cases in which the* anæmia is profound, and in itself can never establish a diagnosis of anything.

The *variability in the size of* the red cells may often be obvious in stained films of the blood; its presence may, however, fail to show itself by mere observation unsupported by actual mensuration To obtain a graphic representation of this variability it is necessary to plot the Price-Jones curve; in certain very rare cases this procedure may constitute the ultimate court of appeal as to whether any given case be one of pernicious anæmia or not

The actual *number of red cells* per c.mm. is in itself of little importance in the diagnosis of pernicious anæmia, in cases requiring treatment they may range anywhere from 4,000,000 to 500,000 per c mm Without knowledge of the red cell count it is, however, impossible to ascertain the colour or volume index, and the calculation of one of these at least is an essential step in diagnosis

Since the red cells are on the average larger than normal, each cell as a rule carries a higher load of *hæmoglobin* than the normal cell The colour index, obtained by dividing the hæmoglobin percentage by the percentage of normal of the number of red cells per c mm is therefore greater than normal, usually although not always it is above unity For the same reason the volume index or the expression of the bulk of the packed red cells against the number per c mm is also greater than normal and always above unity In the diagnosis of pernicious anæmia the estimation of the *colour and volume indices* are actually used as indirect means—the former more indirect than the latter—of demonstrating increase in the average size of the red cells

Finally *the response to treatment* with the antianæmic principle constitutes perhaps the surest means of the diagnosis of pernicious anæmia As laid down earlier in this article it may now be accepted that the ultimate ætiological factor in the causation of the disease is deficiency of the antianæmic factor This deficiency gives rise to the sequence of disturbances of hæmopoiesis outlined above, hæmopoiesis can be restored to normal by the administration of the antianæmic factor either orally or parenterally Exhibition of the factor in sufficient dosage in a case of pernicious anæmia is at once followed by evidence of the restoration of normal blood formation The earliest recognisable phenomenon is the liberation into the blood stream of numbers of the immature red cells which have been prolonging their residence in the bone marrow, these cells appear in the blood as the "reticulocytes" and the occurrence of a reticulocyte shower in the blood after the initiation of therapy with the antianæmic principle serves as proof both of effective treatment and correct diagnosis With effective parenteral therapy the beginnings of such a shower may be evident on the second day after the commencement of treatment and the response at its height within five days, with oral treatment the response may take two or three days longer to appear.

CONCLUSION

To commence with the statement that pernicious anæmia is an entity depending upon deficiency or absence of the antianæmic principle of liver and to conclude with the statement that ultimate diagnosis must depend upon the response to treatment with this factor may appear to constitute reasoning "in circulando" Actually the latter statement is implicit in the former Fortunately it is possible in the vast majority of cases by means of the combination of investigations mentioned above to ascertain beforehand whether any given case is or is not one of pernicious anæmia without putting the patient to the trouble and expense of a course of treatment of doubtful value

The blood picture of *sprue* may be indistinguishable from that of pernicious anæmia, and it responds well to treatment with the antianæmic factor The intrinsic factor may or may not be present in the stomach, and it is evident that the anæmia depends not so much upon its absence of as upon failure in absorption of the antianæmic factor from the bowel For this reason the anæmia of sprue is better treated by the parenteral injection of liver extracts than by their oral administration The failure of absorption from the bowel does not affect the antianæmic factor only, there is also deficient absorption of carbohydrates and of calcium among other substances, and the administration of liver does not therefore constitute the whole treatment of a case of sprue

To some extent, and in certain cases only the anæmia of *idiopathic steatorrhœa* falls in the same category as that of sprue It appears to depend upon failure in the absorption of constituents essential for hæmopoiesis from the bowel, in particular the absorption of iron is affected, and massive iron dosage is necessary for the improvement of the blood picture

ANÆMIAS DUE TO MINERAL DEFICIENCY

Of the anæmias due to mineral deficiency the principal examples are "nutritional" anæmia, the microcytic anæmia often occurring in middle age and chlorosis All these are associated with deficiency of hæmoglobin, they, therefore are characterised by a low colour index and belong to the hypochromic group

Idiopathic hypochromic anæmia (Witts) is intimately associated with iron deficiency and responds readily to iron therapy Patients suffering from this condition almost invariably show complete absence or marked deficiency of the gastric hydrochloric acid, and it is probable that in a good many cases the iron deficiency arises from failure to absorb the iron of the food, for American work has shown that iron is more readily assimilated when acid is present in the stomach The chronic gastritis resultant on the gastric anacidity gives rise to symptoms which are usually treated with alkalis and slops instead of with acid and a high protein diet, thus consolidating the vicious circle

The blood in this type of anæmia does not as a rule show a great deficiency in red cells usually they do not fall below 2 500,000 per c cm, but the deficiency of hæmoglobin may be profound, it may fall as low as 25 per cent, with a colour index in the neighbourhood of 0 4 In untreated cases many of the red cells on suitable staining with eosin, as recommended by C Price-Jones appear much paler than normal this failure of the eosin to "take" on these cells apparently indicates a deficiency of hæmoglobin With improvement on iron therapy the proportion of the abnormally staining red cells decreases, estimation of the proportion of the hypochromic cells forms a useful method of controlling the response to treatment in these cases

Various workers have shown that iron loses a part or the whole of its effect in the treatment of experimentally produced anæmia if given without copper and the same to some extent applies to manganese Therapeutically it is difficult to give iron without at the same time giving one or both of these elements since, as shown by J H Sheldon and H Ramage,[2] most pharmaceutical preparations of iron contain one or both, further, both copper and manganese are very widely spread in the soil and it is almost impossible to avoid taking them on an ordinary mixed diet

The blood picture of *chlorosis* is very similar to that of idiopathic hypochromic anæmia It is unusual to find any marked diminution in the red cells, the deficiency of the hæmoglobin is the main factor even in the presence of a red cell count of 4 000 000 per c mm or more this may fall to the neighbourhood of 30 per cent giving a colour index between 0 3 and 0 4 Typically the condition occurs in young unmarried females, it is sometimes stated that it has ceased to exist, but though it is now much rarer than it was 20 years ago it is still to be met with. The ætiology of chlorosis is unknown, but the fact that it responds well to iron therapy (which, however, must be combined with measures of general hygiene) indicates that it depends to some extent at any rate on deficient iron absorption.

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[2] Quart Jour Med 1932 1, new series 12

"*Nutritional*" *anæmia* is met with mainly in children and is often associated with overlong persistence on a milk diet, it is, however, not infrequently encountered in adults, in some cases the dietetic fault may be due to poverty, in fact to semi-starvation; such cases are met with from time to time but in my experience not so frequently as might be expected in the present period of economic stress More frequently adult sufferers from this type of anæmia are found on inquiry to have been living from choice on an abnormal diet, sometimes through having either misunderstood or too rigorously applied medical instructions, sometimes apparently out of sheer perversity. In nutritional anæmia the iron deficiency is an important factor but low protein content, improper balancing of the various constituents, and vitamin deficiency all play a part. Such anæmia cannot be cured by iron alone; a full and properly balanced diet is also necessary.

The anæmia so frequently met with in cases of *cancer* especially of the stomach belongs to this class in so far as it is not due to hæmorrhage from ulcerated surfaces. It is often stated that the anæmia of gastric carcinoma may simulate pernicious anæmia so closely as to be almost indistinguishable; there appears to be very little evidence for this When metastases occur in the bone-marrow a profound anæmia may result which in certain cases may be associated with the white cell picture characteristic of pernicious anæmia, but the red cells never take on the peculiarities typical of this latter condition. The anæmia of cancer with the cachexia which is so distressing a feature of many cases has been attributed, without much justification, to some mysterious toxin emanating from the new growth Ample cause for the anæmia and cachexia usually exists in the disturbance of nutrition due to the growth itself, ulceration, depression of mind, and other circumstances The anæmia of gastric carcinoma has been seen to respond well to iron therapy combined with measures of general hygiene in spite of the persistence of the growth

One of the *internal secretions* (unless the antianæmic or pernicious anæmia factor be included among these) that is known most definitely to have an effect on hæmopoiesis is thyroxine Myxœdema is always associated with some degree of anæmia; in this case again the blood picture shows nothing characteristic and the diagnosis cannot be established from its examination alone A degree of hypothyroidism short of that requisite to give rise to well-marked symptoms of myxœdema may be associated with anæmia of a fairly high degree Such an anæmia will not improve on iron alone; it calls in addition for thyroxine substitution therapy. It is always well to bear this possibility in mind in cases of anæmia occurring in the middle aged, both male and female.

Of the *anæmias due to vitamin deficiency* the best defined is that of *scurvy*; deficiency of vitamin B probably bears a part in "nutritional" anæmia and it is evident that the B complex plays an important though at present ill-defined part in hæmopoiesis.

ANÆMIA DUE TO ACTION OF DELETERIOUS SUBSTANCES

Under this heading fall many of the cases of anæmia seen in hospital practice. It comprises the anæmias due to sepsis, whether acute, subacute, or chronic and including in the term such conditions as tuberculosis and syphilis; also the anæmia of chronic poisoning such as lead and that of nephritis The red cells may be hypochromic but otherwise show no special peculiarities; they remain of normal size and the colour-index though lowered is usually not grossly so. The white cells may show changes both in numbers, distribution, and morphology, depending upon the nature of the condition giving rise to the anæmia, but the discussion of their peculiarities does not enter into the scope of the present article Except in the case of *B. welchii*, infection with hæmolytic micro-organisms does not give rise to actual destruction of the red cells and is therefore not associated with bilirubinæmia. The anæmia is due to failure in hæmopoiesis brought about by poisoning of the bone-marrow, successful treatment depends upon removal of the source of the poison.

ANÆMIA DUE TO CROWDING OUT OF THE HÆMOPOIETIC BONE-MARROW

To this class belong the anæmias associated with the leukæmias, with lymphadenoma, and the various reticulo-endothelioses such as Gaucher's and Niemann-Pick disease. The anæmia in all these cond appears to depend upon the replacement of the re cell forming marrow by the morbid cells The re cells themselves remain unaltered until the la stages of the disease when the overworked remnant of the marrow may turn immature cells into the circulation.

ANÆMIA FROM EXHAUSTION OF THE BONE-MARROW DUE TO SMALL CONTINUED HÆMORRHAGES

A single massive blood loss acts as a stimulus to the hæmopoietic system; it is followed by a reticulocyte crisis and a rise of the blood count in the cour of a comparatively short time to a level higher than that before the hæmorrhage. In fact, as has been pointed out by various authors, its effect is [illegible] similar to that of a transfusion It was no d clinical experience of this that established the popularity of blood-letting in the past The effect of continued small losses of blood are entirely different No stimulus is afforded by such loss and in course time, whether as a result of anoxæmia from the persistent anæmia or from some other cause, the hæmopoietic system becomes increasingly sluggish

Anæmia of this type is probably seen more frequ as a result of bleeding from hæmorrhoids than from a other cause, such bleeding may persist for years withou drawing much attention to itself It may occur as result of chronic oozing from a peptic ulcer, but in su cases other symptoms usually draw attention to trouble. It may occur in association with menorrhag and metrorrhagia; in cases of this sort, however, it always well to bear in mind that the uterine bleed may be the result of anæmia of the microcytic typ In certain cases in which the uterus is free from orga change an intensive course of iron will clear up su hæmorrhage

Anæmia of this type constitutes a strong indicati for the transfusion of blood. The replacement of th deficient blood constitutes only a small part of th benefit drived The infusion of the blood acts as powerful stimulant to the hæmopoietic system sets red cell formation going again. For this reas in this condition a number of small transfusio at intervals of a few days are greatly to be preferre to a single large one Iron appears to be of use i assisting blood regeneration in this type of anæmi and there is some evidence that liver also helps though whether in virtue of the active princip ontained therein or simply by reason of its value s a source of high grade protein remains doubtful, n view of this doubt, if liver be used at all, whole iver is preferable to commercial extracts in the reatment of this type of anæmia

FAILURES OF UNKNOWN CAUSATION

The anæmia of *aplastic anæmia* differs from that f every other type except that due to massive hæmorrhage in that it is both normochromic and normocytic The history usually serves to clinch the differential diagnosis, but a complicating factor nay be introduced by the tendency to bleed In aplastic anæmia purpura is the rule, and the “brus ard test” is always positive The ætiology of the condition is unknown, the patient may be kept going for some time by means of repeated trans usions, but recovery has never been reported

The diagnosis of *splenic anæmia* rests upon the lemonstration of an enlarged spleen together with n anæmia for which no cause can be found Hæmor hages from enlarged œsophageal varices and else where are common and may prove fatal, in the ater stages the liver becomes cirrhosed, and death esults from cachexia Good results have been claimed from splenectomy in the early stages, but he unanimity of opinion as to the beneficial results f splenectomy in acholuric familial jaundice by no means exists in the case of splenic anæmia Evidence has lately been produced[3] that the primary esion in this condition is hepatic, should this prove o be the case it would serve to explain the varying esults after splenectomy

MEDICINE AND THE LAW

Medical Privilege Upheld

A DOCTOR'S protest against the disclosure of a patient's confidence has been judicially upheld in novel and important circumstances Mr A, a tuberculous patient, under periodical supervision f a London tuberculosis dispensary, was employed s a telephone operator by a City firm and underwent period of sanatorium treatment in 1929 Four years later, Mr B, his deputy telephone operator, developed pulmonary tuberculosis and sued the rm for compensation under the Workmen's ompensation Act, claiming that his disease was the esult of using the telephone instrument used by r A The case was heard on Oct 1st at the ayor's and City of London Court The tuberculosis fficer at the dispensary attended by Mr A received subpœna from Mr B to come to the court and roduce the records of the dispensary showing his atient's condition and treatment there The officer ade a protest both on the general ground that the vidence required of him was obtained by him in onfidence as a medical practitioner, and on the pecial ground of a statutory obligation to secrecy rticle 10 of the Public Health (Tuberculosis) Regulations of 1930 directs that “every notification and very document relating to a person notified under hese regulations shall be regarded by the medical fficer of health and by every person who has access hereto as confidential” Under Section 1 (3) of he Public Health Act, 1896 as the witness reminded he court, refusal to obey the Regulations would xpose him to a penalty of £100 The judge pheld the protest, and the tuberculosis officer was absolved from giving evidence The incident forms a valuable precedent

It is hardly necessary to add that regulations made under an Act of Parliament have just as much force as the Act itself unless a competent court holds that they are ultra vires This particular direction as to non-disclosure was not enacted in the earlier Tuberculosis Regulations of 1908 and 1911, but was introduced into those of 1916, a similar direction being embodied soon afterwards in the Venereal Diseases Regulations of that year Parliament has enjoined the principle of secrecy in a wide variety of circumstances, such as income tax and census information, telegrams, and the adopted children register, though in these special cases the protection is not absolute and official disclosure (as in criminal proceedings for fraud) is not unknown Such analogies, however, lack the all important element of the confidential relationship which exists between doctor and patient This element is present in the regulations under the Public Health Act Inasmuch as compulsory notification of disease is in itself a statutory breach of professional confidence, the statutory direction of secrecy is the more necessary

The Manchester Hospitals Inquiry

The Ministry of Health concluded last week its inquiry into the circumstances of the death of Mrs Taylor on May 14th at the Crumpsall Hospital, Manchester, whither she had been removed from St Mary's Hospital Whitworth-street, where her baby had just been born An outline of the facts, showing how the patient came to be transferred from St Mary's because the hospital was already full, was given in THE LANCET (July 21st, p 158) with a summary of the report of a committee of investigation A largely attended meeting in the Free Trade Hall in Manchester (see THE LANCET, August 4th, p 276) afterwards protested against the insufficiency of the committee's report (which had exonerated the two hospitals) and demanded a public inquiry On request of the Manchester Corporation, the Minister of Health set up a tribunal (consisting of Dr Isabella Cameron and Mr H J Comyns, barrister-at law) for this purpose and four days were occupied in hearing evidence and speeches in the Manchester Town Hall It is not clear whether the tribunal's report, when made, will be published as it stands or whether the Ministry will merely communicate to the Manchester Corporation the official conclusions and recommendations While the case is still sub judice, comment must be withheld but it may be convenient to indicate the issues raised

Mr Lever, who appeared on behalf of the deceased's family, opened various matters of complaint These may be summarised as follows (1) that, when Mrs Taylor with her mother reached St Mary's Hospital there was delay before the doctor saw her, (2) that, when the doctor came he sent her mother out of the room, using the word “scram” (get out), (3) that Mrs Taylor, after the birth of her baby, was put into the ambulance to be taken to the Crumpsall Hospital and waited in the ambulance from 7 P M to 7 2[illegible] P M, no nurse being with her (4) that she was much shaken during the four mile journey in the ambulance, (5) that, on arrival at the Crumpsall Hospital 20 minutes were occupied in taking particulars of her case twice over before she was put to bed; (6) that she was not placed in the ward till 8 P M (7) that the doctor did not see her till 9 15 P M, and (8) that there was delay in acquainting her relatives with her death The legal representatives of the two hospitals afterwards submitted that Mr Lever's witnesses had not substantiated all the matters which he had opened, they protested too at the admission of evidence about previous cases of similar complaint in 1926 and 1933. The allegations which had specially stirred public opinion in Manchester may be gathered from the speech of Miss Jeffrey who represented the Manchester and Salford Women Citizen's Association She asked for an explanation first why, when the nurse had to call the mother because the baby was coming so quickly, the nurse then left the room and the baby was born without any nurse in attendance; the answer seems to have been that the nurse left the room to use the telephone (just outside the door) to summon the doctor. Miss Jeffrey further asked why Mrs Taylor was left in the ambulance with her mother from 7 to 7 25 P M without any medical observation, why she was not given any nourishment between the birth of the baby at 6 20 P.M. and the time she reached the Crumpsall ward at 8 P M, why the patient's request for water (overheard by a fellow-patient) was refused, thirst being a sign of hæmorrhage, why particulars were taken twice at Crumpsall, and why half an hour elapsed before this serious case was put to bed there The professional witnesses called included Dr. J S Fairbairn, Prof Harold Whitehouse of Birmingham, Prof A Leyland Robinson of Liverpool, and the following members of the staff of St Mary's Hospital, Manchester Dr R H Nattrass, resident obstetric surgeon; Dr D. G Brownlie, house surgeon; and Dr Gerrard, the registrar Their cross-examination was directed particularly to the effect of moving a patient so soon after childbirth, the need of rest, quiet, nourishment, and medical supervision, the transfer of antenatal records when a patient is transferred, and the undesirability of over-booking beds for maternity cases. Reference was made to Sir George Newman's recommendation that a margin of accommodation should be left in maternity hospitals for emergencies. Mr Lever had apparently pressed the fact that there was one vacant bed in St Mary's when Mrs Taylor was told that there was no room for her. Dr. Nattrass replied that the empty bed was in the septic ward, and Dr I D. Cameron intervened to explain that it was definitely against obstetric practice to put an ordinary case into a septic ward

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[3] McMichael, J : Jour Path and Bact, September 1934 [illegible]

The inquiry proceeded in an atmosphere indicative of strong feeling The husband and mother of the deceased frequently interrupted the speeches, the mother even mounting the platform where the tribunal sat Applause and derision punctuated the hearing and there were asperities between the principal advocates. In addition to the parties already mentioned, representatives of the following bodies took part in, or were present at, the inquiry · the Women's Advisory Council of the Manchester Labour Party, the Women's Cooperative Guild, the Manchester and Salford Trades Council, and the Maternal Mortality Committee of London. It may be hoped that local opinion will be satisfied that there has now been an adequate investigation Two interesting letters were published in the *Manchester Guardian* just before the inquiry In one Lady Simon, who bears a name honoured in the civic history of Manchester, suggested the pooling of hospital beds even if additional staff and expense would be required. She also observed that the Local Government Act of 1929 was meant to ensure coördination of the voluntary hospitals with those taken over from the guardians, but that hitherto Manchester had taken no such step. In the other letter Mrs Alice Titt deplored the tendency to regar pregnancy as a complaint instead of a natural functio and regretted that women should be forced unwilling into hospitals when local authorities had power t pay midwives in necessitous cases to attend t mother in her own home. She quoted opin to the effect that the study of maternal [illegible] has unexpectedly shown that it is unnecessary t provide clean homes in order to obtain safe confinements in normal cases, and that the increasin preference of the hospital as a place of delivery seem not only not to have bettered the results, but a to have made them worse The letter sugg that modern midwifery has been taken out of t hands of experienced and efficient attendants w the mother can choose for herself, and that you mothers are induced to go to hospitals under econom pressure and without conspicuous advantage

Coroner on Cancer Healer

At an inquest at Westminster last week on M Alice Bishop, aged 62, the coroner commented on t serious responsibility undertaken by Mr D Re Evans, a professed healer of cancer "He hol himself as able to cure a disease which has baff the whole world. if he has a secret remedy wh would cure cancer, ought he not to hand it over to t numerous sufferers?" It appeared that Mr R Evans had treated Miss Bishop from April 3r until Sept 15th Afterwards, on the advice of qualified doctor, she was removed to a nursing ho where she died on Sept 21st from syncope from tox absorption due to ulcerated carcinoma, the ca being quite inoperable

Mr Evans, who volunteered to give e said he was 41 years old He had no medical [illegible] and no knowledge of pathology; he had not bee taught anatomy, medicine, or surgery, and had nev used a microscope, he had got his knowledge f his own experience. He had first met Miss Bish at a lecture he gave on cancer, when six of his cur patients were present When she came to she was suffering from advanced cancer of the ri breast. His treatment was to apply a paint extern over the diseased area with a small brush and t to cover it with oiled silk or gauze, afterwards p on cotton-wool held in place by adhesive plast The paint was a herbal preparation which had in use for 30 years, it was neither a caustic no acid, nor did it contain turpentine, it was not ordinary antiseptic but merely herbs. He w willing to tell the coroner personally the names the herbs, but he declined to state them in pub Pressed by Mr Terrell, who appeared on behalf an executor of the deceased, he said he had ne allowed anyone else to test the preparation denied that in the action of Burrell *v* Evans in the liquid was analysed and found to be Ven turpentine He declined to say how much t liquid cost No newspaper, he said, would publ his formula He had repeatedly asked for his ca to be examined It would take from a year to months for anyone to learn the technique of treatment under his supervision, he himself h been brought up to it. It did not cause intense p to patients. He had appeared before the Minist of Health Cancer Committee in 1923 and had se them a list of 30 persons whom he had cured a who were still alive He did not submit the liqu to the Committee He was not aware, he said, th the Committee unanimously recommended th no further steps be taken to investigate his clai He had charged the deceased seven guineas a wee o had three other patients at the same time paying im at the same rate He denied that he had romised to cure Miss Bishop in three months, o was not aware that Mrs Burrell had given evidence n the 1930 litigation that he had made her the same romise He denied that he sent away his patients rom his house when they were about to die

On behalf of Mr Rees Evans evidence was given y a friend of Miss Bishop who said that the deceased as entirely satisfied with his treatment, Miss ishop had a dread of the surgeon's knife, when she ied, she wanted to go out whole Mrs Blanche athews, of Douglas road, Surbiton, said that r Evans cured her of cancer of the breast after e had had three courses of radium treatment at uy's Hospital, she would not object to a medical xamination. In summing up to the jury Mr gleby Oddie said there was no question about r Evans's good faith, to return a verdict of anslaughter the jury would have to be satisfied at his treatment had either caused death or ccelerated death, he himself saw nothing in the vidence to justify this The jury brought in a erdict of manslaughter The coroner pointed out ain that there was no evidence that the treatment ortened life, the pain Miss Bishop had suffered d not necessarily shorten life The jury retired and turned a verdict that death was due to natural uses accelerated by lack of treatment with a der condemning the interference and negligence Rees Evans

Herbalist and Gastric Ulcer

Sir Samuel Brighouse, coroner for the Ormskirk istrict of Lancashire, concluded an inquest opened n Sept 7th, upon the death of Mrs Pierpoint of arlestown The death had been reported to him y Mr C C Abbott, of Railway road Leigh who cording to the coroner, designated himself on his tepaper as "M I B Th" and as a physio medical actitioner Mr Abbott wrote that he had treated e deceased for 12 months had seen her regularly r the last few weeks, and last saw her alive an our before she died, and that death was due to natural uses Had a similar note come even from a gistered and recognised medical practitioner said e coroner, the registrar would have been unable register the death The inquest was adjourned r a post mortem examination At the resumption e husband of Mrs Pierpoint said she had complained illness on August 15th, Mr Abbott attended her xt day and said an ulcer had burst, on the following onday he told the husband that the case was peless A post mortem examination was conducted Prof MacFall, of Liverpool University who ated at the inquest that he found no evidence atever of any ulcer in the stomach Death was ue to asphyxia caused by fluid, if the abdomen had en tapped there was no reason why she should not ve recovered According to the husband Mr bbott had at no time suggested tapping Asked the coroner if he thought the failure to tap ounted to negligence, Prof MacFall replied that was gross ignorance and gross negligence The oman was allowed to die just as if she had been rottled", tapping would have saved her life e coroner having explained the law to the jury ey returned a verdict that Mr Abbott had fficiently discharged his duty to the patient, ey found that death was due to asphyxia in cordance with the medical evidence The verdict as greeted with applause from the back of the urt

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

GOVERNMENT HOUSING POLICY

THE Secretary of State for Scotland has intimated his decision that in the new housing campaign the same central authority shall remain and the local authorities will be asked to continue their coöperation This partnership has already produced 135,000 houses in Scotland since the war But the task is scarcely half done, and to produce as many houses in the next five years as in the last 15 the machinery must be speeded up threefold Sir Godfrey Collins means to discourage the building of any more two roomed houses, in accordance with the original recommendation of the Scottish Royal Commission He has *provided for advice from architects and continental* experience will be utilised in the new development

Mr John Highton, secretary of the Department of Health, has reminded the Scottish Association of Insurance Committees that in one division in Glasgow, according to the 1881 census, only 882 out of nearly 9000 families had more than two rooms fitted with windows and the death rate among them was 30 per 1000 The quadrangles which were so pleasant a feature of working class houses on the Continent had nothing but an evil significance for Scotland Instead of a cloistered shade of sweet-smelling flowers the interest at the centre was a privy midden If only, he said, a series of quasi independent efforts could be replaced by a single inter related movement Abroad he saw beautiful gardens and wooded grounds immediately opposite the house not miles away in the public parks, and every house he visited was almost perfect in cleanliness Cleanliness was not alien to Scottish temperament but it was to a large extent alien in Scottish practice That was, he thought, largely a matter of education

PUBLIC MEDICAL SERVICE IN EDINBURGH

The operation of the Edinburgh public medical service scheme designed for the dependants of insured people and others of similar means in the city will begin on Oct 1st. A family consisting of only one subscriber pays *4d.* a week, two pay *8d*, three pay *10d*, and four or more pay *1s* A person actually suffering from illness at the time of application for admission as a subscriber must pay an emergency fee of *7s 6d* which entitles him to immediate attention, normally the new subscriber pays an entrance fee of *1s* The service offered, broadly speaking, corresponds to that given under National Health Insurance regulations Benefit does not include attendance at confinements, vaccination, administration of a general anaesthetic the signing of certificates and reports medical attendance in respect of operations requiring general anaesthetics bottles and other containers, examinations, court attendances under Common Law and Workmen's Compensation, Employers Liability, and other statutes The subscriber is permitted to change his medical attendant at any time on notifying the secretary of the service and a member may similarly terminate his contract at any time

Certain difficulties may be anticipated For instance, what part are the hospitals voluntary or official to play in the scheme? One of the flaws of the National Health Insurance is that there is no provision whereby the voluntary hospitals derive benefit from treatment of insured patients There is nothing to prevent a hospital tariff being arranged on the same lines as a "practitioner" tariff, but the organisation of such a scheme would require much foresight and flexibility of administration.

CHIROPODY IN EDINBURGH

The autumn convention of the Incorporated Society of Chiropodists was recently held in Edinburgh, and was strongly supported by the local medical profession Prof. John Fraser, in the course of an address, deprecated the modern tendency of the present day to use high heels. In his view the adoption of footwear with scarcely any heel would cause the disappearance of a large measure of foot disabilities He also criticised the ordinary sock worn by children, which did harm because the point of the sock was not opposite the great toe and when it was close-fitting, and semi-elastic, it tended to pull the toe along the line of the sock The properly designed knitted sock or stocking should be modelled on the exact outline of the natural foot, shoes should have blunt points and should be so designed that the inside edge was straight. Mr. Robert I Stirling said that there were thousands to whom the members of the Incorporated Society of Chiropodists had brought comfort; he had no doubt they would help still more in the future Dr. A S M Macgregor spoke of the desirability of an alliance between chiropody and medicine and regretted the refusal of the British Medical Association to grant the recognition for which the society had applied He thought he could say that most of those who had been prejudiced against its recognition had completely misunderstood the work which the society was doing, and felt quite certain that in a few years full recognition would be accorded to it Dr. G H Percival gave a lecture on some dermatological conditions affecting the foot He dealt with the commoner and some of the rarer skin conditions, illustrating his address with plaster casts Chilblains on the back of the leg were becoming a more common complaint among women and were associated with the wearing of short dresses and silk stockings. Eczema of the foot could be caused either by infection or by irritation from chemical substances The source of infections might be swimming baths and hotel bath floors In working people especially, the presence of abrasions into which dust might be rubbed increased the chances of infection Irritation due to chemicals was rare in the foot, its commonest cause was dye from shoe leather acting on skin abnormally sensitive to the dye dissolved by the sweat Normal skin would resist the action of the dye in such low concentration

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EDINBURGH ROYAL INFIRMARY WAITING-LIST.—It is officially stated that on Sept. 1st the waiting-list at this hospital numbered 3281.

MANCHESTER BABIES' HOSPITAL.—The report for the year ended on March 31st shows that there is a decrease in true rickets where the children are under medical observation, where they are in charge of indifferent mothers and are not attending welfare centres rickets is still prevalent at certain seasons of the year The hospital has many needs, among them an operating theatre, new X ray and sunlight departments, and a better laboratory, all of which have become inadequate It has been found necessary to open the out-patients' department for six days a week instead of four, and Dr. Sylvia K Guthrie has been appointed an hon assistant physician to take one of the additional days A new nurses' home to house 30 nurses and a block to contain the desired improvements is to be built at a cost of £10,000.

UNIVERSITY OF DURHAM COLLEGE MEDICINE

CENTENARY CELEBRATIONS

THE centenary of the foundation of the Univer of Durham College of Medicine in Newcast Tyne was celebrated on Oct 4th and 5th

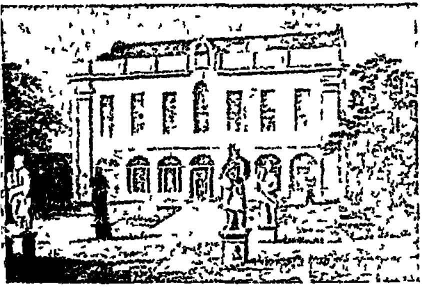
On Thursday afternoon the college was open to the public, and exhibits showing the work of each department were on view demonstrations were given of modern methods teaching the basic medical sciences, and ingenuity was shown in devising ways in which visitors could themselves put in motion me imitating natural physiological processes example, by pressure of a rubber bulb an ox's suspended in saline could be made to beat; cavity was illuminated, and actual valve could be followed by an observer through eye Visitors were also shown respiratory tests, and encouraged to ascertain their own reaction time in response to such stimuli as red, green, and amber lights, and their steadiness of hand and eye as revealed by drawing metal rods through narrow grooves without deviation. The biochemical laboratory demonstrated some of the properties of colloids and the rôle of calcium in nutrition Some skilful dissections of the brain and an interesting collect of surgical instruments were to be seen in the ment of anatomy The pathological laborat showed a large collection of preserved specim some of which were of historic interest, and provided a record of the development of of preparation and preservation. The department biology gave a demonstration of the part played insects in the spread of disease. A display of ments relating to the founding of the college and collection of old medical books and prints attracted considerable interest.

The first home of the school in Bell's Pilgrim-street (picture made in 19

In the evening the president of the college, Thomas Oliver, held an official reception followed a conversazione and dance. Nearly 800 guests received in the Great Hall of the college, among th many distinguished representatives of other uni sities. Messages of congratulation announced by dean, Prof. Stuart McDonald, included one from Faculty of Medicine in New York.

The president then welcomed the guests on beh of the council and teaching staff of the college in a address, holding the occasion to be more appropr for a reunion of old friends than for a formal acco of the progress of the college during the past centu

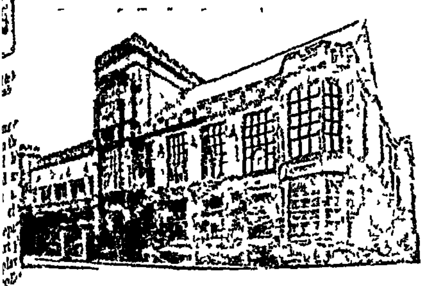
The expression of his hope that the coming century would bring even greater prosperity to the college than it has experienced in the past was warmly received There followed a presentation to the president by Prof Grey Turner and Dr W D Arnison of the first copy of their book on the history



The second home in the hall of the Barber Surgeon Company in the Manors 1834 to 1851

of the college, noticed on another page, his thanks included an expression of admiration for the effort made by its authors to spare time from exceptionally busy professional lives to compile this history

Those guests who remained in the Great Hall were then entertained by a veteran team of sword dancers Others were privileged to listen to a short lecture by Prof Grey Turner on the early history of the college, illustrated by lantern slides He described how a humble beginning was made in 1832 with a small building in Bell's court Pilgrim street at a time when the city numbered under 40,000 inhabitants, a sixth of its present population In another part of the building Prof R B Green and Mr R Whillis exhibited an interesting film of their own making illustrating the dissection of the brain



The medical school to day

On Friday morning the clinical facilities of the college were open to inspection by visitors at the Royal Victoria Infirmary at the Princess Mary Maternity Hospital and at the Fleming Memorial Hospital for Sick Children Exhibitions and demonstrations were to be seen in the department of dentistry at the Sutherland dental school and the Newcastle upon Tyne Dental Hospital and also in the department of bacteriology and the public health laboratory at Armstrong College

A luncheon in the Great Hall of Durham Castle was immediately followed by a procession to the Cathedral Chapter House, where a convocation was held, Lord Londonderry, chancellor of the university presided, having made a special journey by air from London, and the magnificent Norman building formed an admirable setting for this impressive ceremony Honorary degrees were conferred as follows —

Doctor of Civil Law—Sir Hilton Young and Sir Holburt Waring

Doctor of Hygiene—Sir Francis Dyke Acland and Dame Janet Campbell

Doctor of Surgery—Major-General J A Hartigan, Mr J W Leech, M S, M P, and Mr William Robinson

Master of Arts.—Dr W D Arnison

The celebrations were concluded with a commemoration service in Durham Cathedral to which all visitors and undergraduates were invited when the Bishop of Durham, Dr Hensley Henson, visitor of the university, delivered an address

MANCHESTER MEDICAL SOCIETY

CENTENARY CELEBRATIONS

THE opening general meeting of this society took place on the first Wednesday of October, 1834 and the centenary was accordingly celebrated on the same day this year Dr E Bosdin Leech, who is president, expressed his pleasure at occupying the chair held by, his uncle, Dr Daniel J Leech in the jubilee year The society's life had, he said been spanned by two memberships, that of Dr Daniel Noble, who being one of the original members was present at the jubilee, and that of Dr Judson Bury who was present with them now Sir Thomas Barlow had come from London to join them his span of life was not far short of that of the society itself.

PICTURESQUE EPISODES

The main part of Dr Leech's presidential address was devoted to the visit of Prince Charles Edward in 1745 and the part Manchester doctors and others practising medicine took in it

On the losing side were Dr John Byrom poet, unqualified practitioner and inventor of a shorthand system, Dr Thomas Deacon, non juring bishop and general practitioner, with several members of his family, one of whom Thomas Theodorus Deacon was executed later Maddock, apothecary's apprentice, who turned traitor the Dawsons father and son, the former of whom gave shelter to Lady Barbara Fitzroy, a grandchild of Charles II, while the latter has been made famous by Shenstone's ballad according to which his fiancée attends the execution and dies at the same time as her lover and Syddall the barber who in the '45 suffered the same fate as did his father after the '15 On the opposite side were Samuel Kay rigid nonconformist and introducer of cod liver oil and his cousin Richard Kay a Bury doctor of fervent prayers who gave a description of the retreating Highlanders and Peter Mainwaring, the aristocratic leader of the resistance party who wanted to halt the enemy with scythes, shovels and mopsticks The fate of the participants was traced as far as possible including that of the heads of Syddall and Thomas Deacon both of which were placed on the Manchester Exchange as a warning One night the heads disappeared and it was not till 50 years later that their fate became known when Dr James Bardsley after dinner one night told the story how his patient Miss Frances Hall on her death bed told him how her brother Edward Hall ([illegible] of the Manchester [illegible] had. by means of a ladder placed across the street, removed the heads and buried them in their King-street garden

Other episodes showed how shipwreck had brought John Roberton and a coach accident had brought James Braid, the inventor of the word hypnotism, to Manchester, and how Bispham had left it to become king's physician, and Samuel Cave, owing to lack of labels on infirmary medicines, with the result that one of his patients had eaten his ointment He also told of body snatching troubles and the attack on the Cholera Hospital in 1832, when a headless body had been found in a coffin, as well as of the life of Dr Samuel Silverthorn Bailey who, after studying medicine in Manchester, acted as surgeon with Nelson and finally founded the Somerset Hospital at Capetown The fates of Lavinia Robinson, who disappeared in the frost of 1813 and who later was said to have been put into her grave in a solid block of ice, and of Miss Hannah Beswick, who was embalmed and kept above ground 100 years in order to prevent premature burial, were also narrated

BANQUET

At a dinner held at the Midland Hotel the guests included the following ·

The Lord Mayor of Manchester, the Bishop of Manchester, the Chairman of the City Libraries Committee (Councillor Maitland), the Chief Librarian (Mr Nowell), Mr E F Finch (President of the Sheffield Medico-Chirurgical Society), Dr J A Hargreaves (President of the Leeds and West Riding Medico-Chirurgical Society), Mr Robert McDougall and Sir Christopher Needham (Manchester University), Dr A J Hall (Sheffield), and Mr Aubrey Herbert, as well as the following honorary members Lord Crawford, the Dean of Manchester (the Very Rev Dr Garfield Williams), Sir Walter Moberly, Sir Holburt Waring, Mr Zachary Cope, Sir Thomas Barlow, Mr Walter Cobbett, Dr Murray Bligh, Prof E Mellanby, Dr J A Ryle, Mr P W Hull, Dr Morley Fletcher, Sir Humphry Rolleston, and Mr Morriston Davies

The toast of "The Society" was proposed by Lord Crawford and responded to by the president, that of "The Guests" by Dr A Ramsbottom with response by the Lord Mayor and Dr Hall Mr William Coleman sang the Rev W Felton's "Farewell-Manchester," said to have been sung by Prince Charles Edward when he left Manchester.

MEDICAL EXHIBITION

The history of medicine in Manchester is well told in an exhibition opened on Oct 1st by Mr. Cobbett in the new public library. Of the twelve display cases—

One is given to non-medical books by Manchester medical men, such as Charles Clay's books on coinage, Ferriar's Illustrations of Sterne and Roget's Thesaurus. A second is devoted to medical works produced locally—James Braid's "Neurypnology," Blackley's "Catarrhus Æstivus," Perceval's "Medical Ethics," Cogan's "Haven of Health" Another case is used for rarer books belonging to the medical library of the University, especially early printed books such as Guy de Chauliac (Venice, 1480) There is also an interesting fifteenth century manuscript on urines, and more modern rare books such as Beaumont's work on the gastric juice (Plattsburg edition), Parkinson's shaking palsy, and Addison's book on suprarenal disease Two cases are devoted to the vaccination controversy between 1798 and 1816, on which subject the medical library is especially strong Nearby is the society's history with the original agreement signed by the first members, and in another place are books, papers, and relics of body snatching days One case has personal and medical mementoes of the first president, Dr John Hull A collection illustrating the history of the stethoscope has been brought together, the instrument used by Dr Hull himself being an early example

Round the walls are Manchester's best medical portraits, including those of Thomas Percival (from the Literary and Philosophical Society), of Edwar and Richard Hall (from St Mary's Hospital), Dr Lloyd Roberts (by Orpen), and of Henry Wo a former treasurer of the Manchester Infirmary addition there is an interesting collection of pic of the Royal Infirmary illustrating its deve from the earliest days The exhibition will open till Oct 20th.

A history of the society by Dr E M Brockbank shortly to be published His son, Dr Wil Brockbank, is hon secretary of the society this

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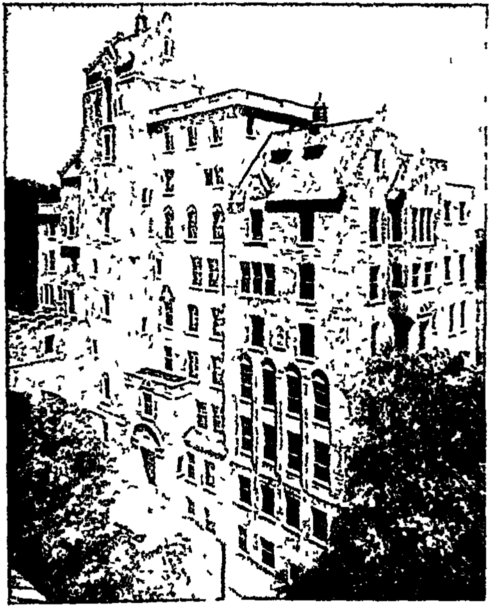
MONTREAL NEUROLOGICAL IN

ON Sept 27th, a little less than a year from laying of its foundation-stone, the new Neurological Institute was formally opened Th institute, under the directorship of Dr. Wil Penfield, provides for the medical and surg treatment of neurological patients and is also fu equipped for clinical and laboratory research T conception of this undertaking is traceable back the time. six years ago, when Dr. Penfield and h assistant, Dr W. Cone, came from New York to up neurosurgery at McGill University. Beds we provided for this work at both the Royal Victo Hospital and the Montreal General Hospital, the former Dr. Meakins made room in his labora for a few workers But it was soon evident from th rapid growth of work in this neurosurgical cli that more room and equipment were needed, a thanks to the appreciation and cooperation of th colleagues at McGill a way has been found f the provision of these necessities. The Rockefel Foundation has given half the money required f building the institute and has endowed the labora The rest of the money needed for the building h been given by a small group of benefactors, while t province of Quebec and the city of Montreal ha made themselves responsible for the upkeep of clinical part.

The result is a building of considerable and beauty which stands alongside the Royal V Hospital, at the back of the pathological institu It is connected with the hospital by a bridge at th third floor which arches over University-stre The fabric is of grey Montreal limestone and the is in harmony with that of the adjacent buil These occupy the lower slopes of Mount Royal the back of McGill and command a fine view to th south over the city and the St. Lawrence The institute contains eight floors, and of these th lower half is devoted to patients and the upper h to scientific work The second and third floors hav about 32 beds for public patients and, on the four floor, there is room for 15 private patients Additio beds for public patients are available in the wards the Royal Victoria Hospital, and the clinical work a whole is to be administered by the superintende and nursing staff of that hospital Two operati theatres and X ray plant are found on the fifth flo The theatres are so constructed that visitors ma view the operations from a gallery which is screen off by glass in such a way that risks of contaminati are minimised, and the necessity for wearing ma and gowns dispensed with. A novel feature is recess beneath the gallery and behind the operat from which the field of operation can be photograph This is ingeniously contrived by the use of a long foc lens and a mirror arranged over the operating fi which can be adjusted by the photographer means of a distant control. Consulting-rooms for th neurosurgeons are provided on the same floor as theatres and those for the neurologists are on ground floor. The laboratories, on the sixth an seventh floors, are well arranged and equipped f histological, biochemical, and physiological wor On the sixth floor there are also a library and roo for the director and his secretarial staff The animal houses, on the seventh floor, have been carefully planned and each room has an outdoor run on the roof exposed to the sun On the top floor is accommodation for the chief resident and for four or five research fellows As the latter are likely to be foreigners the convenience of such an arrangement needs no emphasis, and it is typical of the care and thought that have gone towards the construction of all departments of the institute Mention must also be made of the admirably equipped and roomy photographic department on the ground floor, the lecture amphitheatre that occupies part of the ground floor and basement, and the squash court for residents in the upper part of the building



The New Neurological Institute

Ornament has been sparingly used in this building but wherever present it has some bearing upon neurology or anatomy In this the influence of Dr Penfield is manifest He has desired that any decorations used should be significant of the purpose of the institute On the south west corner of the building is a dedication stone of his own design bearing the words "Dedicated to the relief of sickness and pain and to the study of neurology," and about these words is the symbolic representation of the sun casting light upon the human brain and spinal cord In the facade, in positions where the architects called for ornamentation, are plaques of pleasing geometrical design which the untutored eye will recognise as representations of ancient trephines The main doorway in University street leads into a square reception room which has been conceived as a hall of neurological fame The dominating feature here is a copy in Carrara marble of the statue by Barrias, entitled 'La nature se dévoilant devant la Science,' the original of which is in the Louvre It shows a draped female figure lifting a veil from her face and shoulders and is perhaps the only work of its kind in which the artist has attempted to symbolise the relationship between scientific research and nature The hall in which this stands was decorated by Barnet Phillips Frescoed upon the ceiling is a representation in greyish black of the neuroglia cells in their proper layers within the cerebellum after a drawing by Golgi The nerve cells and capillaries are faintly outlined in the pale ochre background In the centre of the ceiling is painted the head of Aries the ram which, in the signs of the Zodiac, presides over the brain About this are four hieroglyphic figures from the Edwin Smith papyrus which together represent the brain This papyrus dates back to 300 B C and according to Dr William Francis, contains the earliest known reference to the brain in human records Surrounding the ram's head is a circle bearing a quotation from Galen which interpreted, is ' But I have seen a severely wounded brain healed " This quotation is taken from Galen's commentaries on the Aphorisms of Hippocrates at a point where he criticises the master's statement that a wound involving the brain is invariably fatal

In a frieze about the room are the names of 14 famous neurologists Hughlings Jackson, Sir Victor Horsley and Sir Charles Sherrington from this country, Charcot and Claude Bernard, Cajal Golgi, von Monakow, Nissl, Alzheimer and Erb, Pavlov Weir Mitchell, and Harvey Cushing Their names stand for high endeavour and brilliant research in neurology and neurosurgery on both sides of the Atlantic Two of them are still working and the last mentioned, Harvey Cushing was fortunately able to attend the opening ceremony With him were other distinguished members of the medical profession, some of them pupils of the men whose names are honoured in the way described Representatives from this country were Dr Gordon Holmes, Dr J Godwin Greenfield and Dr Dorothy Russell After the formal unveiling of the statue in the reception hall by the mayor of Montreal inaugural addresses were delivered before the assembled guests Prof Archibald expressed his good wishes to the institute in a short but gracious speech Dr Wilder Penfield gave an account of the significance of the new institute the events that led to its construction, and spoke of the idealism behind the work which will go forward within its walls In the first of the two foundation lectures Dr Harvey Cushing gave an historical review of psychiatry, neurology, and neurosurgery In the second foundation lecture Dr Gordon Holmes put forward a strong plea for clinical research He spoke of the necessity for careful bedside observation accurate and simple description and, above all things devotion to truth.

A final word may be said concerning the geographical and national relationships of the institute Attached to the famous University of McGill and situated in the cosmopolitan city of Montreal with its large French population it serves as a link between Canada the United States, England and France and it may be expected to attract research workers from all these sources as well as from other countries Its director Dr. Penfield has personal knowledge of the foremost schools of neurology on both sides of the Atlantic and doubtless he will incorporate much of his experience in directing this new school in Montreal At the same time there is to be no slavish imitation of any of the older foundations It is desired to establish a school that shall be essentially Canadian in atmosphere and teaching

PUBLIC HEALTH

Hospital Beds

THE annual report[1] of the Ministry of Health discussed the problems opened up by surveys of the enlarged public health services now administered by county and county borough councils A proper understanding and arrangement with voluntary hospital management was one of the issues. Sir George Newman carries the matter further in his report[2] as chief medical officer to the Ministry. Reliable information about the actual number of beds available *for the sick* throughout the country has hitherto been difficult to obtain Standards of bed-spacing are not uniform in institutions managed by various authorities, although certain minima were laid down by the Ministry under the Poor Law many years ago In certain areas at times of stress there is undoubtedly serious overcrowding both in voluntary hospitals and council institutions, and beds in the latter which are really unsuitable for those, at least, who are acutely sick, but which have been absorbed at such times for the purpose, have sometimes been permanently labelled as for the sick. In poor-law institutions the borderline between the sick wards, nurseries, and the "house" has often been ill-defined in practice, if not on paper Figures, therefore, which were widely quoted during the passage of the Local Government Act through Parliament, as showing the provision for the sick made by local authorities, require close examination before a comparison with the number of beds in voluntary hospitals can be formulated.

THE NUMBER AVAILABLE

For these reasons, a statement contained in Sir George Newman's report (p. 194) is of first-class importance It is now possible to state approximately the accommodation for sick persons, in broad categories, made under council and voluntary management Exclusive of hospitals for patients suffering from mental and acute communicable diseases, there appear to be about 1850 hospitals with 215,000 beds; of these, some 860 council institutions (including hospitals) provide 143,000 beds for the sick and about 1000 voluntary hospitals have 72,000 beds Included in these figures, it should be noted, are 130 council hospitals and sanatoria for tuberculosis with 14,674 beds and 135 voluntary hospitals with accommodation for 9000 cases of tuberculosis. For this disease there is some seasonal or epidemic interchange of accommodation with acute communicable disease in hospitals provided by local authorities, and the figures generally require slight qualification in other respects, but for practical purposes they give a true picture of the position In addition, local authorities possess 172 hospitals with 139,000 beds for mental disease and deficiency against 184 with 17,000 beds voluntarily provided, and there are 954 hospitals for acute communicable disease with 37,638 beds entirely under the control of local authorities.

Taken together, in round numbers, local authorities provide about 2000 hospitals and about 320,000 beds for all forms of disease or defect, as compared with rather less than 1200 voluntary hospitals having 90,000 beds. Even after deducting the provision made for mental conditions and communicable diseases, which statutory obligations have left mainly in the hands of the councils, the latter possess acco modation for the sick approximately double volume that supplied by voluntary effort Whe however, the comparison is limited to general hosp accommodation, the contrast is not quite so marke Councils own 36,059 beds in separate general hospita now administered under the Public Health and 17,820 in such hospitals still under the Po Law Acts, a total of 53,879, whereas the correspondi number of voluntary beds is 49,673 The counci continue to provide beds for the sick in institutions under the Poor Law numbering 68, over and above the 53,879 already mentioned, but is certainly true that a large proportion of these permanently occupied by aged, infirm, and chro patients, not comparable in character to volu hospital patients Indeed, a far larger fraction the occupants of beds in council general hosp are of a chronic type than will be found in volu hospitals By way of illustration, an analysis of th population of the institutions, belonging, on the hand, to a large county borough and, on the oth to an industrialised county, may be quoted, in th latter 41 6 per cent. of the inmates were chronic a incurable cases and only 8 5 per cent acute or s acute, while even in the town as many as 29 per ce were chronic or incurable, although the pro of acute cases was much higher—viz, 48 per cen Sir George Newman, in discussing the points to borne in mind by those interested in vol hospitals, lays emphasis on the statutory duty local authorities to provide for *all forms and s* of sickness among the poor, the patent inabi of voluntary hospitals in most areas to accommod all the acute sick, and the consequent inadmissibi of the view sometimes held that the volun hospitals should be free to pick and choose th patients and relegate the chronic and less interes to the rate-provided institutions. Clearly, no negotiations can be commenced on this assumptio

Number of Beds Available for the Citizens of Fo Large Cities

Population at Census 1931	Glasgow 1,088,461	Birmingham 1,002,603	Liverpool 855,539	Man ch 766,3
Total municipal beds	6083	4408	6138	[illegible]
Total "public" beds in voluntary hospitals	1835	1307	1217	[illegible]
Total beds, municipal and "public" voluntary	7918	5715	7355	[illegible]
Municipal beds per 1000 population	5 59	4 39	7 17	[illegible]
"Public" voluntary beds per 1000 population	1 69	1 30	1 42	[illegible]
Total beds per 1000 population	7 28	5 70	8 59	[illegible]

THE NUMBER REQUIRED

As to the number of beds actually required for physically sick by large towns, some general i may be reached from a detailed statement contain in the report derived from data furnished by Glasg Birmingham, Liverpool, and Manchester The to number of beds, statutory and voluntary, in th cities at the middle of 1933 was respectively 8 (8 04 per 1000), 6197 (6 18 per 1000), 8423 (9 84 1000), and 6683 (8 72 per 1000). Many, of cour e occupied by patients not locally resident and true comparison must eliminate these The edical officers of health have estimated their numbers ith the results tabulated above

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[1] See THE LANCET Sept 15th, p 607

[2] On the State of the Public Health H M Stationery Office 4s 6d.

As Sir George Newman points out, the differences the ratios must not be attributed entirely to ariations in council or voluntary hospital policy ocal customs and social conditions, such as housing, no doubt exercise a considerable effect upon the demand for hospital treatment, but it seems reasonable to conclude that, in these days no fewer than 6 beds per 1000 (exclusive of mental disease and deficiency), and probably more nearly 8 per 1000, are required by town dwellers, irrespective of the size of the population, if the full benefits of modern medicine, surgery, and midwifery are to be put at their disposal

PANEL AND CONTRACT PRACTICE

Deputising on Insurance Committees

THE question of deputy medical representatives n insurance committees has come before the Panel onference again this month as it did a year ago n a motion from London The decision to press or such deputies was passed at the last panel ommittee in September The Insurance Acts Committee has discussed the matter with the Ministry f Health who point out that legislation would be equired and if deputies were allowed the concession must apply to every member of the insurance committee and not to the medical members alone It ad moreover always been understood that those lected to serve on insurance committees should be ble to give time to the work and to become expert handling delicate and intricate matters The eal problem underlying this resolution is the training f practitioners on panel committees so that when the me comes for the older and more experienced men drop out of office others will take their place ith some experience of the duties they will be called pon to perform The proposal to legalise deputies not likely to be popular with insurances committees, hich will probably prefer to retain their customary ounsellors as long as possible, but it is time to onsider seriously whether the present policy of eeping the same men in office as their representatives n outside bodies is really in the best interests of the edical profession On the one hand it may be rgued that if men are willing to do this work and re doing it satisfactorily they should be allowed to ontinue to do it They become more and more xpert in dealing with any situations which may rise and are consequently better able to represent eir panel committees than less experienced men his is obviously the collective view of many such ommittees, for year by year the same men continue office On the other hand it may be argued that e panel committee would be a more effective body many of its members were enabled to become xperienced in the work of outside bodies by rota or ther suitable arrangement, always with a care at at least one experienced man should be a presentative whilst another was learning The rofession as a whole is grateful to men who are willing give up so much of their spare time to unremunera e work of this kind but it may be inexpedient accept so much of a particular individual's time hen there are others willing and entitled to share e duties Left out in the cold the other members se interest and are likely to drop out London inks that deputies, although only attending in the bsence of the real representative, would obtain aining which would be helpful in the future That ould be worth trying

An Extended Service

In an address to the Association of Welsh Insurance ommittees Dr D Llewelyn Williams, medical ember of the Welsh Board of Health pointed out ow nearly the insurance medical service had been at various times to full fruition In 1914 provision was made in the Budget and money actually voted by Parliament for the provision of (1) medical specialists, (2) general practitioner clinics, (3) laboratory services, (4) nursing, (5) health lectures—when the war put an end to that and other dreams In 1920 money was found to establish a regional medical service, with some but not much consultant function, and in 1925 the question again arose of extending the scope of medical benefit to include specialist services A scheme was then drawn up to make available to insured persons a system of specialist services, laboratory aids to diagnosis examination by X rays, massage, mechano therapeutics and other things, but again something intervened The coal crisis of 1926 resulted in sickness claims being so heavy as to preclude for the time any extension of medical benefit But Dr Llewelyn-Williams does not admit defeat and is still hopeful that the recommendation of the Royal Commission of 1926 to include specialist advice and laboratory services will soon be realised Without laboratory facilities, he remarked, a doctor has often to work in the dark In Wales they had two excellent laboratories, one at Cardiff the other at Swansea but there is no such provision in the north of the principality and he was looking to see a laboratory established in connexion with University College at Bangor and supported by the northern county councils and insurance committees

Placebo Prescribing an Objection Met

Sir George Newman has pointed out in his annual report that although extravagant prescribing has diminished yet the cost of general prescribing per head of insured population is slowly increasing, so much so that if it goes on there will be a danger of there not being sufficient money to pay for the really necessary but expensive drugs like liver extract and insulin which must of course be provided under the service He further suggests by quoting figures from Scotland that much of the medicine prescribed by English practitioners is given on the placebo basis The medical member of the Welsh Board of Health has remarked that some too of his countrymen are "unreasonably enamoured of the bottle of physic" It was suggested in this column recently that the payment of a small sum by the patient for each prescription handed in would solve this difficulty (1) by reducing the cost to the insurance fund of medicines supplied, and (2) by creating a slight deterrent against the continual demand for medicine not really necessary by making the patient contribute towards its cost in other words, it would tend to stop placebo prescribing Of this proposal a correspondent writes —

> I do not feel that the last paragraph of the article on placebo prescribing is logical or that the remedy suggested is a desirable one—this quite apart from the general question whether panel patients should pay for drugs separately, the adoption of that principle might be desirable on other grounds [illegible] a slight reduction in weekly payments on behalf of the patient would cost him no more in the [illegible] But

far from stopping placebo prescribing, surely the very fact that the patient paid something towards the cost of his bottle of medicine would confirm his faith therein. You say 'the public appreciates what it has to pay for.' As it is, panel patients have a suspicion that the panel doctor's medicines are not so good or 'so strong' as those prescribed by private doctors or by the same doctors for their private patients A common remark is 'I told him I didn't want any panel stuff and he gave me a bottle of really good medicine You see they won't let them give really good medicine on the panel except when you are very ill indeed' Whether we are wise to attempt to take away the prop that a bottle of medicine provides when we have so little else curative in our armamentarium is again another matter It seems likely that the quack dispenser would have scope for a flourishing trade if doctors really gave medicine only when it is required. Before we manage to do without a bottle of medicine we shall probably have to invent some other symbol or idol But to make a patient pay for something which he already thinks is worth more than it actually is seems to me bad policy from the educational point of view "

The remedy was suggested chiefly on financial grounds; but, however, "when we have so little else curative in our armamentarium" it would certainly in our view be unwise to attempt to abolish the bottle of medicine, which helps psychologically, if not always medicinally, to restore the patient to health merely on educational grounds Probably the personality of the prescriber is the most important factor in treatment There is just as much placebo dieting or placebo sunlight prescribed as there is placebo medicine, but in the former all the cost comes on the patient and none on the insurance funds The bogy of "panel stuff" has very little foundation; the main reason why patients prefer the doctor's medicine is the convenience of obtaining it without the delay and trouble associated with a further visit to a chemist Further, they feel that there is less possibility of a mistake "Has he given me the wrong medicine?" is a definite cause of anxiety among patients Since placebo prescribing cannot yet be eliminated, in the interests of the patient, the proposal to charge him something for his prescription may prove to be a sound one It is embodied in the new Canadian proposals.

On Charging Fees

At the Panel Conference to be held next Thursday at B.M A House some change is to be proposed in Clause 7 (iii) of the terms of service, dealing with fees charged to insured persons A weekly paper suggests that any insurance doctor who charges a fee to an insured person should be fined £50 without further ado There are, however, obviously occasions when a fee is quite proper. The story dates back to an occasion when an insurance doctor was summoned before his medical service subcommittee and heavily fined, when he had not the remotest idea that the patient who had paid him a fee was an insured person, let alone on his own list He may have joined the list years before and not required any treatment in the meantime It is not unusual for a patient to give no indication to the doctor that he is insured, or that he is on the list of the doctor he is consulting; he may pay him a fee thinking (as some misguided persons still think) thereby to obtain better treatment, and then complain to the insurance committee about it The Ministry of Health has already decided that Clause 7 (iii) does not apply where a doctor inadvertently charges his own patient It has now been agreed between the approved societies and the Insurance Acts Committee that this clause should contain words which make it clear that where a doctor, through a genuine mistake, charges an insured person on his own list proceedin need not be instituted. The fee of course must returned. As a set-off to this concession the p during which an insured person, having obta private treatment from an insurance doctor, claim a refund, is to be extended from one to th months

There are of course cases where the patient obviously too ill or the emergency too sudden it to be explained at the time that the patient insured person—Clause 7 (iii) is really designed meet such cases—but the use of the clause has extended by many insurance committees Acco are ordered to be withdrawn, fees are repaid the clause to insured persons who were at the quite able to state their insurance status and to treatment as insured persons But because th think they prefer "private treatment," with convenience of private medicine supply (no wait at the chemist's), they obtain such treat surreptitiously, deliberately hiding the fact that are insured persons; only when the treatment finished and payment requested they say " I am an insured person . . the insurance cc will pay you for this" The insurance comm is popularly thought to have huge funds from to pay doctors in such cases or to refund the pat for fees they have paid to doctors In fact th are no such funds These claims have long ca much bother to insurance committees and doct and it is time for an amendment to this requiring the committee to satisfy itself there was some genuine reason for withl information as to insurance status Against change it has been argued that an insured perso entitled to treatment without payment becau the stamps on his card; but if a railway sea ticket holder does not produce his ticket w required he has to pay again and does not nece get a refund If they can do so patients should they are insured persons and produce their m cards

The I A C seems to have considered the almost solely from the point of view of the d inadvertently charging his own patient. The medi service subcommittee for London deals with a proportion, possibly half, of the disciplinary in England, and yet it is difficult to recall, since case cited above, a single case under Clause 7 coming up for decision and certainly none in an insurance doctor inadvertently charged a pat on his own list It is too rare an offence to ju the extension of a time-limit from one month three The new clause was only to be accepta the time-limit was extended, but the I A C now waived the objection The conference how would surely do well to turn its attention to common practice of insured persons not men insurance status when obtaining treatment, a amend the wording so as to make it clear that a refund can be obtained adequate reasons be given for not mentioning insurance status might well consider, too, the advisability of sen all these claims not to the medical benefit but to medical service subcommittee, which contain equal number of doctors and laymen with independent chairman Claims under Clause are always decided upon the papers Since attendance of neither party is required, the subcommittee would seem the fairest one by constitution to determine a matter in dispute betw doctor and patient.

ADDRESSES AND ORIGINAL ARTICLES

INVENTIONS AND THE OUTLOOK IN NEUROLOGY*

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For my title to-day I have chosen the word "invention" as best fitting the bringing in of a ıow idea—an invention of the mind which may prove o be a discovery of the truth or may fail as a false ıypothesis, as well as the bringing in of a demonstrable fact or of a new method. My address is a tory of remarkable flights of fancy long ago which ıre now the proved facts of our belief and of other "castles in the air" which became for the time he strongholds of the scientific world, who dwelt herein for a long time, contented because the building vas beautiful to think upon and could be altered at vill by successive occupants according to their fancy, nd who would not see a notice long before put up hat no mortar or foundations of "busy common ense" are available in this country. These castles re now largely deserted and such as dwell therein re not in security.

Wonderful inventions for the study of the structure f the nervous system and tireless research have sulted in knowledge practically complete of the ıost intricate and marvellously beautiful network ith input paths leading from the outside world and utput paths leading to the muscles for action, lmost incredible in its extent, everywhere continuous nd so complicated that it is impossible to prove r to conceive how it works except in a few of its ower and grossly mechanical regions. This vast nd solid edifice of proved knowledge of structure as added little to our knowledge of function and isease. This quarry has been worked out and labour ı it has well nigh ceased. Delving into the function the nervous system by experiment has reached high a refinement that the signals by which each art works can be made visible and audible. Always e same signals in every part alike only more and ore rapidly repeated as the message becomes ronger and more urgent, and the end result of ese fine labours is some knowledge as to how the wer and simpler regions—namely, the spinal cord d brain stem—work. To the greatest of living ıysiologists who has spent a long life in the experimental study of the nervous system—the Rede turer for last year, Sir Charles Sherrington—the ghest and largest part of the nervous system, the ain, is still mainly a form and a series of events, d his ignorance of much of their relation bids him spair. Yet proclaiming himself an optimist, as posed to a defeatist, he puts the question: "Will it er be possible to understand the nervous system?"

In the recognition and distinction of the nervous ases the past century has brought an ever increasing and now almost complete knowledge which has t yet and will not reach finality, for disease is bject to evolution and devolution and disappearance least for a time. The causation of many of the seases is now clear and of recent years studies of chemistry and of virus infection have brought ggestions of what the future may discover in aladies of which we do not know the cause. Methods of treatment though far behind those of diagnosis are advancing, and at the moment we seem to be in possession of means of diagnosis and treatment which will surely remove the terrible diseases, general paralysis and locomotor ataxy, from the community. Yet the fact remains that the four most prevalent and relentless of the nervous diseases—disseminate sclerosis, progressive muscular atrophy, paralysis agitans, and most of the vascular diseases—come before us without any clue whatsoever as to their cause, and without any means whatsoever of their prevention, nor in the case of progressive muscular atrophy even of the slightest amelioration. These are the hopes of the immediate future.

The means by which invention begins, the arousing of that lasting interest which does not rest until discovery is made, is often intangible and a thing perchance and of personality, but sometimes it has been recorded, and I may introduce the great discoveries in neurology with an instance.

Gall: The Pyramidal Tract

At the end of the eighteenth century a self-conscious lad pondered upon his disability to answer promptly in class the things he knew well, and concluded that it was because nature had not given him a fine forehead and prominent eyes. His interest in the brain and speech never thereafter left him. He became a very great anatomist of the nervous system and he proved by his dissection the definite structural path from brain to muscle partly crossing in the medulla—the pyramidal path—and his proof was then and there accepted by the knowledgeable world for all time. Like Harvey he was not the first inventor of this idea, but like Harvey he gave such proof of its truth that no one wished to deny it. Gall's discovery of a definite pathway conveying movement from brain to muscle was the foundation of all subsequent paths of function within the nervous system. In his early days Franz Josef Gall laid down the truest conception of the brain as the exclusive seat of the highest nervous functions only. By his conception of speech as a function of the forward part of the brain he was the inventor of the idea of localisation of function in the brain. It does not detract from the greatness of the discoveries of this remarkable man that he went over into phrenology and died discredited, torn from his high position by the prophetic denunciation of Flourens that there are no separate highest functions to be localised in the brain, but that all are interwoven. Around his conception of cerebral localisation such a war was raged during the nineteenth century—complete defeat at first, and then after years complete triumph, and then later defeat not yet complete—as has stimulated more investigation and produced more useful discovery than any other event in the history of neurology. At the moment the localisation of function in the brain is presumed by our physiologists, but admittedly without means of scientific proof. The only proved localisation of function is that of the conduction tracts—the input and output paths which connect the animal with the outside world.

Purkinje: The Nerve-cell

In 1835 an Austrian priest of gipsy family became possessed of a microscope and like the inventor of bacteriology—Leeuwenhoek, the linen draper—he became interested therein. In a short space of time he had discovered the nerve-cell which added to Gall's nerve tract was the instigation of all later discovery, and had invented a hardening reagent—bichromate of potash, which would allow sections of soft tissue to be cut, a machine—the microtome to cut the sections, a stain—carmine to bring out the details, a clarifying reagent—oil of cloves, which made microscopic examination possible, and Canada balsam with which permanent preparations could be made. Johannes Evangelista Purkinje's inventions were epoch-making in the progress they caused. He was removed from the priesthood and made professor of physiology at Breslau As the fruits of these fine inventions came at once the establishment of the cellular theory of tissues from Schleiden and Schwann, and the cellular pathology of Virchow. Rosenthal demonstrated that the nerve-tract was made up of fibres springing from the nerve-cell, and Schwann found the insulating sheath which protects the nerve-fibres Waller, by his methods of degeneration, commenced the tracing of the nerve-tracts within the nervous system. Thereafter, with the wonderful discoveries and patient work largely of the German school, in which the names of Weigert, Edinger, Cajal, and Golgi stand out, the structure of the nervous system has been made known with such delicacy of detail, such intricacy of connexions, such enormity in amount, as to be altogether outside the possibilities of present-day comprehension of the relation of structure to function, except in its lowest and least complicated regions It is referred to nowadays as one entity—"the nervous network"—just as it was first named the "sensorium commune" a century and a half ago

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* The Harveian Oration delivered before the Royal College of Physicians of London on Oct. 18th, 1934.

Prochaska: Reflex Action

In 1784 a professor of anatomy in Moravia wrote a very short account of the nervous system, and in attempting to explain how it worked his flight of thought rose to almost the exact present-day conception He said that "physical and mental stimuli acting upon ascending nerves are conveyed directly through the ganglia and network of nerve-threads, to be reflected thence by means of descending nerves with a result in action" This wonderful discovery in thought of reflex action, arrived at so far as we know without definite experiment, is the foundation of most of what we now know as to the way in which the nervous system works I will ask you to compare these words of Georg Prochaska with those of Sir Charles Sherrington in the Rede lecture for last year.—

> "Brain and nerve are but a skilfully laid train of powder between the muscles it fires and the restless world outside which fires it The question who pulls the trigger is easily answered It is the outside world, and again an animals motor behaviour where the brain nets are large excels in variety and nicety but it fails to offer anything radically different from reflex action elsewhere"

By actual experiment Sir Charles Bell at Middlesex Hospital, Majendie in Paris, and others discovered the function of the spinal roots as input and output paths by which reflex action is carried on, and Bell most importantly first conceived of the long reflex processes which went as high as the brain. Now all unconscious action is reflex action The great Pavlov and others have shown us how large a part reflex action plays in conscious action and behaviour It is when we arrive at those processes in the brain which are not traceable to outside stimuli, and cannot be reduced to the principle of reflex action, that our knowledge as to how the mechanism works fails rapidly and finally. I may perhaps give you a simple example of the utter dependance of high cerebral function upon a reflex process.

When I speak to you my speech does not flow out well-trained speech centres in the brain as does from a full cistern I must have an immediate delicate reflex return reaching my by my ears and by sensation of movement of my lips which keep me instan informed as I go along that what I am saying is in pattern. If anything blocks the path of both those actions, I shall not be able to finish even a my speech though long-practised will break down at into an inarticulate jargon in which both words and disappear If through a faulty attention to my signals I miss out an important word, my meaning to become unintelligible to my listeners and my an imperfect function.

Hughlings Jackson: Nervous Function

Hughlings Jackson, who is the pride of neurology as Harvey is of English medicine, was inventor who greatly influenced and moulded present position of neurology In method he was ablest deducer from what seemed to be the of observation, but his chief genius was that he a relentless dreamer who criticised with a inquisition the flights of thought to which he and apparently only gave to the world those survived this ordeal, for there is hardly a his which has not borne the test of time He ceived that nature had builded the nervous upon the same pattern of function in its several And that at the lower stations the local of the individual segments of the body were after, but that at higher levels the of everything below were subserved in compound proportion, and that at the highest the nervous system was concerned with the ments of the animal as a whole—perhaps some these concern some parts of the brain more others This remarkable conception which when popular belief was convinced that separate functions in the several parts of the were ascertained facts, is substantially the knowledge of the present day. The supporter local centres of function in the brain had their parent, Gall, and the simple but statement by which he was overthrown · "There no such separate functions for localisation." I perhaps put it like this · the functions of hearing, and feeling are clearly separate so far the nerve terminations in the eye, ear, and concerned; but when a stimulus from one of organs reaches the nervous network it modified by all the other stimuli which are at the moment, and the higher in the nervous it spreads this modification increases, so becomes more and more difficult to think of speak of it as a stimulus in one isolated such as vision, hearing, or feeling. Hughlings wrote, I cannot conceive any function of apart from the function of movement.

I will give you a common example of the which the principle of local function in the brain than that in the tract of output and input has placed the clinician. A patient of mine had a tumour in the right occipital lobe which was removed complete success, but the lobe which was supposed the seat of one-half of his visual life was destroyed. the next 20 years, though he could not see to his left he carried on his occupation as a highly skilled worker, nor was his judgment in filing true to hundredth of an inch in the least impaired, nor his memory or appreciation in any way lessened

It seems clear that the local loss of function one sees daily from local lesions of the brain is the result of the blocking of the input and paths, and I have arrived at the conclusion that when mental defect occurs from a not too extensive focal lesion of the brain it results from a block upon those important tracts which put the several regions of the brain in touch with one another and never from lesions of the higher regions of the brain which were formerly supposed to subserve mental functions exclusively Therefore we have now the vast expansion of the brain in the words of Sherrington —

> "as an input and output signalling system which is newly arisen as a gigantic combining mechanism for the signals from the outside world and as a dominant part of the nervous system which tends to deal with the requirement of the animal as a whole more than does any other part"

Todd Locomotor Ataxy and Peripheral Neuritis

One of the most remarkable inventions in a flight of thought, to become a proved principle a century later, came from the distinguished founder of King's College Hospital, Robert Bentley Todd, in an attempt to explain lead paralysis to his pupils He said —

> "I believe that the muscles and nerves are early affected and that at a later period the nerve centres may become implicated The nervous system is thus first affected at its periphery in the muscles and nerves and the poisonous influence continuing the contamination gradually advances towards the centre"

Recently it has been shown by Aub and others that in lead paralysis accumulation of the lead occurs first in the affected muscles and that the poison seeps up through the nerve endings into the nerves and reaches the central nervous system The principle that the nerves are protected by their fatty sheaths against the advent of poisons and infections everywhere but where the nerve-endings are exposed at the extreme periphery, and that it is only in these exposed terminals that noxious agents can gain access and that they travel by a process of seepage along the nerve filament to gain the central nervous system is now generally accepted Viruses that affect the nervous tissues travel in the same way and seemingly spread universally As the only nerve terminals exposed to the outside world are the olfactory terminals in the nose, it follows that virus infections of the nervous system must be acquired by droplet infection of the nose or by wounds which expose the nerve filaments to infection

Dr Todd, who was by far the greatest clinical neurologist Britain had produced until the time of Hughlings Jackson, was the first to begin the breaking up of the spinal diseases at that time all classed as "paraplegia," by his remarkable invention of locomotor ataxy as a distinct clinical entity He did this with his usual vivid imagination and his customary absolute faith in his own powers of clinical and post mortem observation He states that the antero lateral region of the cord is the path for common sensibility, and that the cerebellum is the organ commanding position and posture, and that the posterior columns are subservient to the cerebellum conducting to it peripheral impressions of position its guidance, and he makes the separation for the first time between spinal paraplegia and spinal ataxy Todd wrote this four years before Romberg wrote his work eight years before Russell Reynolds described the disease as "muscular anæsthesia" and eleven years before Duchenne christened it "progressive locomotor ataxy"

Quincke Lumbar Puncture

In the year 1891 and in a quiet way came an invention which slowly led the most astounding progress in our knowledge of nervous disease and of its diagnosis, differentiation and treatment No event in the history of neurology has brought so many assets as has the invention of lumbar puncture Heinrich Irenæus Quincke, of Magdeburg, conceived that he might relieve the symptoms of hydrocephalus by draining the cerebro spinal fluid Six years previously Corning, in America had drained the fluid for the treatment of tuberculous meningitis, but Quincke was the first to make his invention known throughout the world The discovery of changes indicative or characteristic of certain diseases in this hitherto unimportant fluid soon followed, and lumbar puncture has become a routine in diagnosis and treatment It has given us the means of speedy relief from the agonising pain and danger of increased intracranial pressure, the cure of epidemic meningitis, of cerebral uræmia, of bromide and barbitone poisoning, and it has given us spinal anæsthesia It has led to the discovery of the clinical features of meningeal hæmorrhage and its common cause in leaking aneurysms, to the easy recognition of the many forms of meningitis, and gives definite indications of prognosis in the sugar chloride, and cell content Pressure upon the spinal cord and occlusion of the cerebro-spinal space are now easily discovered by the increased protein in the stagnant fluid, and the exact site of the pressure can be made visible by the injection of lipiodol which is opaque to X rays

Our whole conception of peripheral neuritis has been changed from one of an affection of the peripheral nerves into one of a malady creeping upwards along those nerves into the roots and central nervous system by the constant discovery of changes in the protein content of the cerebro spinal fluid and often by the presence of large numbers of cells therein In spirochætal infection lumbar puncture has discovered that when the nervous system is affected this occurs at quite an early stage and this infection often dies out Those subjects in whom signs of infection persist in the cerebro-spinal fluid are alone liable to the advent in after years of general paralysis and locomotor ataxy, and in the early treatment of such patients with malarial infection mercury, and arsenic we think that we have now a certain means of stamping out altogether these terrible diseases from the community Quincke's simple invention has caused an almost immeasurable bound forward in our ability

Economo : The "Encaged" Virus

In 1921 Konstantin v Economo conceived of a virus which gaining access to the nervous system by the exposed olfactory terminals in the nose, becomes an "encaged virus" within the nervous system with no means of getting out and which if not conquered by the natural processes might remain indefinitely to cause either recurrences of symptoms from time to time or alternatively to progressive degeneration and death of the nerve elements On this hypothesis he would explain the varying results of lethargic encephalitis now a permanent cure, now a series of recurrences, and often again an advancing and relentless break up of nervous function long after the initial infection and when the primary symptoms had been slight He would explain the absence of case to case infection in lethargic encephalitis and in poliomyelitis that the virus is encaged by the time the symptoms appear and cannot get out to infect others

Infection can only occur from carriers and in the presymptomatic period of these diseases when the virus is a surface saprophyte in the nose Simila-

and Galloway, at the Pasteur Institute, have shown how the viruses infecting the nervous system travel along the nerve threads to even the remotest parts of the nervous system, and that any peripheral nerve twig if dissected out and placed in the nervous system of another animal will cause infection. In the course of the universal spreading of the virus, the remarkable brightly staining "inclusion bodies" in the nerve-cells and the lymphocyte exudations along the nerve-fibrils remain as evidence of its passage. This complete invasion of the nervous system may occur without producing any symptoms at the time.

In the case of one encaged virus—that of herpes zoster—it seems clear that a local lowering of vitality of part of the nervous system by reason of injury, exposure to cold, arsenic administration, and other causes, may break the encagement and the virus discharges outwards along the debilitated nerve to flower upon the skin in the characteristic shingles and that flowering upon the skin is the only means of continuing the species and infecting other members of the community After that flowering the virus within the nervous system dies as does the annual plant in the garden after its flowering But it may happen that the debilitated nerve along which the virus is able to discharge is a motor nerve in which case the virus is unable to flower, but it may cause much commotion with lymphocytic swelling in the nerve, and this is undoubtedly the cause of many of the motor-nerve paralyses for which we have hitherto had no causal pathology, the commonest being Bell's facial paralysis from exposure to cold. Economo's principle of an infection encaged within the nervous system, existing and producing changes, without causing symptoms or alteration of function perhaps for years and finally destroying, is likely to bring important developments in the future. As a clinical fact it has been known for long years in the end-results of spirochætal infection, unrecognised at its advent and symptomless perhaps for half a lifetime.

I will speculate for a moment upon disseminate sclerosis. That this malady never appears before the age of puberty, means I submit that it takes 14 years or more for the pathological process to run before symptoms occur A single transient characteristic sign of this disease lasting but a few days often occurs as long as 25 years before the progressive relentless disability begins, and I suggest that the process of demyelination is all over and irretrievable so soon as the progressive symptoms are present We are faced with the inevitable scarring which long progressive and symptomless demyelination must entail We must find some means of detecting the subjects of this disease during the symptomless stage if we are to treat them successfully It is a remarkable fact that while disseminate sclerosis affects the central nervous system indifferently and everywhere, its destructive potentiality falls upon the younger elements of the nervous system only—those that have been recently acquired—namely, the pyramidal path, the coördinating mechanism for the upright stance and the finer movements of the hands and for the recently acquired function of speech The older functions of the special senses with touch, pain, and temperature are never progressively destroyed

Recent Inventions

Recently, accident has revealed a principle which may have an important bearing upon neurological discovery in the near future. A virus expert was working at the Lister Institute upon the disease of sheep which is called "louping ill" or "staggers" This is a virus disease which, entering by the usual nasal route, passes along the nerve threads to the cerebellum and there kills every nerve-cell while leaving the rest of the nervous system entirely unharmed One day this pathologist became severely ill with acute meningitis which was supposed at first to be tuberculous, from which however he made a complete and rapid recovery. He went to America to carry on his researches upon louping ill. In the course of a short time two of his co-workers and two of his laboratory assistants were seized with severe acute lymphocytic meningitis which rapidly recovered. and it was proved from the serological reactions and by infection of animals that the recoverable meningitis in man was due to the same virus which causes destruction of the cerebellum in sheep.

I have myself recently seen three cases of acute meningitis in farmers who had been in contact with "louping ill" infected flocks, all of whom recovered and in the light of accidental infection among the virus workers producing recoverable meningitis, the nature of the infection seems clear

The principle is that an infection in an animal which gives rise to a definite and incurable disease in an animal, may produce in man an entirely different and curable disease. We already had this principle demonstrated in the opposite sense in the virus of herpes febrilis which in man produces an insignificant event, but when introduced into the rabbit is apt to produce a fatal inflammation of the nervous system. Nervous diseases are common in animals and it is to the closer association of veterinary and human neurology and the wide investigation of the two taken together which have recently made a beginning that we look with hope to the discovery of cause and treatment in our common nervous diseases which are at present entirely mysterious.

The origin of disease and of tissue degenerations as the result of toxins from bacterial infection has entirely dropped out of neurology except in the cases of the three exotoxins of tetanus, diphtheria, and botulism, which differ entirely from the element factor in what is commonly referred to as toxic absorption, in that they are real and can be isolated and put in a bottle and their effect proved by experiment. A few years ago the origin of pernicious anæmia and of subacute combined degeneration of the spinal cord in toxic absorption from intestinal infection seemed to have good foundation on clinical and experimental grounds, but subsequent discoveries in gastric and hepatic function have swept all such ideas away and have introduced a deprivation origin for these diseases with highly successful means their prevention and amelioration. Toxic absorption at present much spoken of, will probably be similarly discarded from other realms of medicine within reasonable time.

It is highly interesting that the exotoxin of tetanus by entering into combination with the protoplasm of nervous system, produces a train of events identical with that of the virus of hydrophobia by living within the nerve protoplasm—in one case the highest degree of over-function in the fatal spasm, in another case a complete loss of function in the toneless paralysis, just like that of severe peripheral neuritis It seems probable that peripheral neuritis at present without known cause which seems to be increasingly common among us, may be due to virus infection, and the relapsing tendency after partial recovery is like the behaviour of an encaged virus The difficulty in this investigation is the discovery of a susceptible animal without which we cannot find or prove a virus as the cause of disease.

Deprivation conditions are likely to prove a fruitful field in the development of our knowledge of the causes of nervous disease. We already have tetany, subacute combined degeneration, beri-beri, and pellagra as due to known deprivations. The pigeon fed on polished rice and therefore paralysed almost to death, which can be restored to complete strength and action in an hour by the administration of a few drops of infusion of rice husk, is a miracle of the effect which vitamin shortage and vitamin administration can make within the nervous system It has recently been suggested that the commonest of nervous diseases—disseminate sclerosis—may prove to be a deficiency disease

The recent invention of Sir Henry Dale that efferent stimuli in the vegetative nervous system produce their effect by the liberation of a chemical intermediary of the choline group, and that stimulation of the sympathetic in otherwise denervated skeletal muscle results in tonic contraction seems to me to open up the possibilities of great advance in our very scant knowledge of the pathology of the myotonias, myasthenias, and myopathies

The Progress of Neurology

In the progress of neurology the all essential labours of the physiologist and of the anatomist have almost reached finality Much addition to the wealth of their discoveries is not to be expected in the future The bacteriologist similarly seems to have added all that is possible from his researches Not even the absorption of hypothetical toxins troubles us as a factor in the causation of nervous disease The clinician and his inseparable pathologist have at the present time a fertile field in which regional diagnosis has become well nigh perfect in which to carry on the separation begun by Thomas Parkinson a century ago and to show the easy recognition of new and distinct nervous diseases at present unrecognised Thus the 30 years of the present century have given us subacute combined degeneration, dystrophia myotonica, amyotonia congenita, epiloia, Schilder's disease, narcolepsy, the meningeal hæmorrhages, the cerebral aneurysms, the pituitary syndromes, and many other distinct and easily recognisable maladies It is astonishing how much more common a malady becomes when it has once been well described There is scope for a rich harvest in the future, especially in the realms of peripheral neuritis of the muscular atrophies, and of the vascular diseases

The virus worker and the biochemist have probably the greatest immediate future before them heralded by their collection of the plums of the immediate past in their researches on poliomyelitis, tetany, pernicious anæmia, and insulin

The closer association between botanical veterinary, and human medicine which has made a beginning will I think have an outcome in much advance for nervous diseases are common in animals and have not received sufficient attention

The psychiatrist struggles with his most difficult burden of advance almost alone Neither anatomist, physiologist, bacteriologist, virus worker or biochemist have as yet done anything material to clear the path for his progress as they have for the neurologist Just as the highest functions of the nervous system allow of no physiological or anatomical analysis, so do its disorders at present admit no pathological and causal conception The primeval forest of psychiatry with no pathways cleared to look around is hard beset with an ever growing jungle of intricate terminology

The progress of neurology in my lifetime has been amazing and its present position is highly advanced for a civilisation which Prof Elliot Smith insists is not yet sixty centuries removed from primitive man. And yet I doubt not that neurology has but made a highly successful beginning

THE SUSCEPTIBILITY OF MICE TO THE VIRUSES OF HUMAN AND SWINE INFLUENZA

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We reported in 1933 (Smith, Andrewes, and Laidlaw) that we had succeeded in infecting ferrets with a virus isolated from human cases of influenza and also with a strain of swine influenza virus sent us from America by Dr Shope , at that time we were unsuccessful in infecting mice and other animals Shope (1934) confirmed our observations and further showed that swine influenza virus, when inoculated intranasally into ferrets under ether anæsthesia, led to the appearance in the lungs of areas of atelectasis and consolidation, often extensive We were able without difficulty to repeat Shope's work with swine influenza virus and also found that similar lung lesions could be induced in ferrets by injecting the virus directly into their lungs through the chest wall In view of these developments we reinvestigated the susceptibility of mice to the viruses under study

The Investigation

INFECTION OF MICE WITH SWINE INFLUENZA VIRUS

A 5 per cent suspension of lung from a ferret infected with swine influenza was centrifuged and the supernatant fluid injected into the lungs of six mice through the chest wall, the virus used had been passaged 42 times through ferrets The mice used were of the strain bred at the Medical Research Council's farm All the mice apparently remained well, but when they were killed five days later one of the six was found to have plum-coloured consolidation of the posterior lobe of the right lung A suspension prepared from this was inoculated intranasally into a ferret and into the lungs of six more mice. The ferret developed typical fever and symptoms of "ferret influenza", and again one of six mice, killed four days later, showed consolidation of about half one lobe of lung A suspension of this lung duly produced infection in a ferret It was also inoculated into the lungs of six mice, six others receiving the virus intranasally The latter were lightly etherised and virus placed upon the [illegible] from a 1 c.cm. syringe a drop at a time, until they had drawn in 0 1 c cm Later we found [illegible] and instilled only 0·05 c.cm. [illegible] mice were killed Three [illegible] the chest had lung [illegible] six in which virus had been [illegible]

Since this experience [illegible] intranasal method [illegible] no difficulty in [illegible] transfers through [illegible] have been kill[illegible] day after infection [illegible] lungs have been [illegible] saline to make [illegible] been centrifuged [illegible] used as the [illegible] passage [illegible] the [illegible] quently immune to the ferret strain of virus Virus after 14 mouse passages also proved infective for a ferret, but this animal was not subsequently tested for immunity

INFECTION OF MICE WITH HUMAN INFLUENZA VIRUS

The human influenza virus chiefly studied was the W.S strain isolated from a case of influenza during an epidemic in the spring of 1933, in referring to it as influenza virus we are fully conscious that its claims to be regarded as the ætiological agent await further proof The virus used for the first successful experiment had been passed 98 times through ferrets The original attempt to infect mice with this virus was unsuccessful; six mice inoculated intranasally showed no lung lesions when killed four days later. A second attempt was more fortunate, of five mice similarly inoculated all became ill and three out of five showed, when killed, lung lesions like those of the mice infected with swine influenza Passage from one of these mice was successful, every one of five mice becoming infected, and the strain has now been carried on in series through more than 11 passages After 11 passages through mice the virus was still pathogenic for a ferret The effects of the two strains of virus upon mice will be described together as they do not appear to differ appreciably from each other in this respect.

SYMPTOMS AND COURSE OF INFLUENZA IN MICE

Mice inoculated intranasally with a 10 per cent suspension of virus have shown symptoms often after two days, but more frequently three or four days after infection. Their coats appear staring, they become less active, lose their appetite, and remain huddled together in a corner of their cage; their eyes are often half closed They may become progressively worse or show apparent improvement for a time. Later the illness is characterised by exaggerated respiratory movements, definitely slower than those of normal mice. Mice may die as early as the third or fourth day of their illness, but symptoms may continue for at least 14 days before death We cannot give figures of the percentage mortality, as most mice have been killed when obviously ill, but probably after a heavy dose of virus the large majority would die One mouse has certainly recovered from an infection with swine influenza virus after being very ill for some days; it was subsequently found to be immune. With smaller doses of virus recovery is apparently more frequent There is not necessarily a close correlation between symptoms and post-mortem findings Thus, two mice killed four and eight days respectively after infection with the W S. strain had very definite symptoms but no macroscopic lung lesions post mortem, while a number of others with very few symptoms showed extensive lung involvement at autopsy The proportion of mice of our stock susceptible to strong virus is at least 90 per cent. and probably nearer 100 per cent

In one experiment six mice were infected intranasally with the mouse strain of W S virus without the customary anæsthetic; several showed definite symptoms When killed on the fifth day one mouse showed extensive, another localised lung lesions; the lungs of the other four were macroscopically normal Eight mice inoculated at the same time under ether anæsthesia were all severely affected.

MORBID ANATOMY

The only constant changes observed post mortem have been in the lungs In mice dying as the result of infection the lungs are deep red and almost airless except for small emphysematous areas at the periphery; in these animals all lobes are usually affected In mice killed three to six days after infection all degrees of lung involvement are seen Lesions consist of areas of plum-coloured consolidation, often with ill-defined margins, the more uniformly affected pieces sink in water On section a good deal of fluid exudes from the cut surface Most frequently attacked are the upper parts of the lungs on the dorsal aspect, areas of hepatisation can be seen apparently spreading out from the roots of the lungs on each side. In other mice the tip of one or other lobe is attacked and very often the azygos; in yet others only small, dusky red spots one or two millimetres across are seen. A strictly lobar distribution of lesions is unusual In a few mice very definite greyish spots were visible on the lungs, all these gave a heavy growth of bacteria in culture and bacteria could be seen in smears from the affected areas.

HISTOLOGY AND BACTERIOLOGY

Histological studies of mouse lungs are at present very incomplete. In affected areas the larger bronchial tubes contain desquamated epithelial cells and leucocytes with pyknotic nuclei There is some œdema and infiltration of leucocytes around the bronchioles and blood-vessels. The alveoli contain fluid and sometimes fibrin and red and white blood cells In stained smears may be seen many polymorphonuclear leucocytes with pyknotic nuclei and mononuclear cells with vacuolated cytoplasm.

Cultures were made from many affected lungs by dropping pieces into broth and by cultivation on plain agar, serum agar and blood agar. On ten occasions there was no growth on any medium Four times cocci grew out in the cultures and rather more frequently growths of a small bipolar Gram-negative bacillus were obtained On the solid medium the colonies appearing were usually very scanty and we regarded them as of no ætiological significance

FILTRATION OF VIRUS

(*a*) *Swine influenza virus.*—The lungs of three mice showing lesions after infection with swine influenza virus were pooled, minced, ground with quartz, and 20 c cm. of a mixture of equal parts of Hartley broth and saline. The supernatant fluid, after centrifuging, was filtered through a sand and asbestos pad filter and then through a Gradocol collodion membrane (Elford, 1931) having an average pore size of 0 6μ Six mice were inoculated intranasally under ether with 0 05 c cm of this filtrate. Five days later all looked normal, two were killed and of these one showed moderately severe lung lesions, while the other was normal By the eighth day after inoculation the remaining four looked definitely ill One died on the ninth day and the others were killed when very ill on the tenth day, all these showed extensive lung lesions The filtrate used for this experiment was inoculated also into a ferret, which developed a mild disease and was subsequently proved immune to ferret virus Another ferret was successfully infected with lung virus from one of the mice which received the filtrate

(*b*) *Human* (*W.S.*) *virus* —A similar experiment was performed on six mice with W S. virus The filtration was carried out by the same technique Three mice were killed five days after infection; two of the three showed lung lesions. The remainder looked ill on the fourteenth day and were sacrificed; all showed definite but localised lung lesions In this instance also the original filtrate proved infectious for a ferret. Passage from the lungs of one of the mice killed on the fifth day infected five out of six mice

It is clear, therefore, that both strains of virus are capable of passing a 0 6 μ membrane

NEUTRALISATION BY ANTISERUM

Both viruses were neutralised by specific antisera

(a) *Swine influenza virus*—A centrifuged 10 per cent emulsion of infected mouse lung was mixed with an equal volume of the pooled sera of three ferrets hyperimmunised against swine influenza The mixture, after standing ten minutes at room temperature, was inoculated intranasally into six mice One mouse died from unknown causes on the following day; the others remained quite well for 23 days, after which four were proved to be susceptible to infection Of six control mice receiving a mixture of virus and an equal volume of saline, five died with typical lung lesions between the third and fifth days

(b) *W S virus*—A similar experiment was carried out with W S virus The serum used was from a horse * hyperimmunised with tissue from ferrets infected with the W S strain, details concerning this serum will be published later Five mice receiving mixtures of virus and undiluted serum survived, whilst five controls all died with typical lesions six or seven days after infection The five mice surviving all proved susceptible on subsequent test 13 days later

In a later experiment the same serum in a final dilution of 1 30 completely neutralised the W S virus, in a 1 100 final dilution it showed definite but incomplete neutralising power Serum from the same horse before immunisation was without effect

Autopsies have shown that an adequate amount of specific antiserum usually prevents the development of any lung lesions, but in a few mice, and in those receiving an inadequate amount of serum, one or more small patches of consolidation may occur This absence of lung lesions in the mice receiving serum-virus mixtures seems to be a complete answer to the possible contention that these lesions are brought about *merely by the inhalation of fluid and bacteria* into the lungs during anæsthesia

ATTEMPTED INFECTION BY OTHER ROUTES

We failed to infect mice with either the swine or human strains by subcutaneous, intraperitoneal or intracerebral inoculation, mice so inoculated were tested later and found not to be immune though their disease may perhaps have been less severe than that of the controls The possibility that the disease may be modified in mice which have received previous injections by these routes has to be explored further

CONTACT EXPERIMENT

We have no evidence suggesting that infection can pass by contact in a fatal form from mouse to mouse In one experiment a group of mice exposed to others infected with swine influenza virus apparently acquired an immunity without having shown symptoms of the disease This result has, however, not proved regularly reproducible with either strain

EXPERIMENTS WITH B W STRAIN

The mice used in the experiments so far recorded were not isolated by the methods of rigid quarantine used in our experiments with ferrets In fact at the beginning of the work, mice infected with swine and human strains of virus were together in one room though in different boxes We felt, therefore, that there was a possibility that swine influenza alone was pathogenic for mice and that the mice subsequently used for work with the human strain had been unwittingly infected with the swine virus In order to exclude this possibility, we took some virus from another (B W) human strain which had been kept dried in the cold room for four months This after one passage through a ferret was taken to the laboratories at Hampstead, where no swine influenza had been under study, and there used to infect six mice. Six days later these were killed and three of them proved to have small lung lesions of the usual character These were pooled and a suspension used to infect six more mice Four days later all these showed symptoms and were killed, five of them showed typical lesions, which in one mouse were very extensive We were also able to show that bacteriologically sterile filtrates of these affected lungs would infect mice and that the virus was neutralised by the hyperimmune horse serum previously referred to We accordingly feel satisfied that our virus strains of human origin are pathogenic for mice

A word concerning the B W strain is necessary, it was the only fresh strain obtained by us in the winter of 1933–34 No widespread epidemic of influenza occurred in London during that winter and from a few sporadic cases diagnosed as influenza we failed to recover virus The B W strain was obtained in early March from a patient afflicted with what was clinically typical influenza, this differed from the sporadic cases only in that it was locally highly infectious and attacked all the five members of one household The B W strain was apparently identical, both immunologically and in its effect on ferrets with the W S strain isolated in the spring of 1933

ADAPTATION OF VIRUS

In the earliest experiments described above with the swine influenza virus only one out of six mice was successfully infected in each of the first two passages, later, success was the rule This difference might have been due either to an adaptation of the virus or to the change in technique from intrapulmonary injection to intranasal inoculation under ether The latter explanation seems the more likely. In a later experiment we infected six mice intranasally with swine influenza virus direct from a ferret, this virus had not been passed through mice One died four and another five days after infection the rest were killed on the seventh day, and all showed extensive lesions Though evidence of gradual adaptation of swine influenza virus is thus lacking it may be a factor in experiments with the human influenza, neither with the W S nor B W strains were the viruses as virulent for mice at the beginning of the mouse passages as they proved later We have met, however, with such fluctuations in virulence of the virus that we are reluctant to draw hasty conclusions

Discussion and Summary

In general mice react to the viruses under study much as ferrets do but pathological changes are found in the lungs rather than the nasal passages As in ferrets the only successful method of infection yet found consists in introducing the virus directly into the respiratory tract Injection by other routes has in neither animal produced either infection or a striking immunity In this respect our results differ from those of Gibson, Bowman, and Connor (1919) who claimed to have infected baboons rhesus monkeys rabbits, guinea pigs, and mice with influenza virus by subcutaneous and intraperitoneal inoculation The swine influenza infection in mice is like that in the ferret and unlike that in the pig the virus also produces a severe and perhaps fatal disease, no concomitant bacteria being necessary

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* The inoculations of the horse were kindly performed by our colleague, Major G W Dunkin

The work described is in a very early stage: obviously much remains to be done. It has been thought wise to publish this account now in order that other workers may have the opportunity of using mice for the study of influenza during the coming winter. Clearly, the mouse is an animal much more readily available for such work than is the ferret We have some evidence that ferrets are more susceptible than are mice to infection with human influenza virus which has been passed repeatedly through ferrets; whether this applies to virus of immediate human origin we do not know Our impression is that attention to certain points will make the successful infection of mice more likely First, mice should be inoculated under an anæsthetic Secondly, a number of mice should be used for each experiment; success will not necessarily come at the first attempt nor in every mouse. Thirdly, unfiltered, as well as filtered material should be used in the initial experiments

Evidence that mice are susceptible to the viruses *of human and swine influenza rests on the following* facts:—

(i) Virus of ferret origin regularly produces in mice lung lesions not unlike some of those encountered in influenzal pneumonia in man

(ii) After several passages through mice, the virus still produces the characteristic disease in the ferret.

(iii) Cultures of the lungs of infected mice on ordinary media are often sterile and do not in any case tend to yield growths of any particular organism.

(iv) Filtrates of infected mouse lungs through membranes having an average pore size of 0 6μ are infectious for other mice This indicates, according to Elford's (1933) calculations, that the diameter of the virus is less than 0 3μ

(v) The two viruses when isolated from mice are neutralised by the corresponding sera prepared in other animals

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TREATMENT OF
SCHISTOSOMIASIS WITH ACRIDINE COMPOUNDS

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IN THE LANCET of April 28th, 1934, A. C Fisher published a note stating that cases of schistosomiasis can be cured in five days by the oral administration of acriflavine If this proves to be true it will be a boon to millions of patients scattered all over the world In Egypt alone 9,000,000 out of the 15,000,000 inhabitants are suffering from this disease. The present antimony treatment in the form of tartar emetic extends over an average of 29 days and necessitates attendance on the patient personally on alternate days to receive an intravenous injection. Faulty injection leads to grave complications, and the treatment itself is not free from danger The treatment with Fouadin, which is an organic antimony compound, lasts on an average 19 days, and the patient receives nine intramuscular injections; this is a distinct improvement over the tartar emetic treatment, but is far from ideal

Trypaflavine and the allied compounds have been given an extensive trial in the Research Institute and the Endemic Diseases Hospital, Cairo [illegible] patients received sufficient doses and were re-examined at the end of treatment and occasionally at intervals afterwards. The results show conclusively that the acridine derivatives have no curative effect [illegible] schistosomiasis due to *Schistosoma hæmatobium* or *S. mansoni*—a conclusion in agreement with the observations of Dr A Fakhry, described in a letter in THE LANCET of July 21st (p. 162)

The compounds and method of treatment [illegible] were :—

1 Trypaflavine in solution given orally
2 Trypaflavine given in capsules
3. Trypaflavine intravenous injections
4 Diamino-methyl acridine (May and Baker) capsules
5. Atebrin tablets by the mouth

Acriflavine is a synonym of trypaflavine The first is an English patent (expired) and the latter a German patent The formula is diamino-methyl acridine chloride hydrochloride $C_{14}H_{14}N_3Cl\ HCl =$ 296 055 The diamino-methyl acridine supplied by May and Baker is a reddish powder, and according to the formula written on the label is not chloride hydrochloride On analysis it was [illegible] to contain chlorine It is more soluble and has the same acridine-basis Atebrin is alkylamino acridine dihydrochloride

All the patients treated were adults The diagnosis was based upon the microscopic examination of the excreta. The viability of the ova was ascertained by hatching before and after the treatment In the cases of intestinal schistosomiasis the microscopic examination of a smear made from swabbing the rectum was resorted to, and occasionally sigmoidoscopic examination and taking a smear from the lesion was done The cases treated as in-patients were given a laxative every night as advocated by Fisher Varying doses were tried and also different means of administration Fisher treated two cases with intravenous injections and 50 by the oral route. Adults received a maximum amount in the five days of 0 7 g The result was a cure in 39 of his 52 cases. The resistant cases were mostly children who received proportionally smaller doses Our results were as follows.

RESULTS

1 *Trypaflavine given in capsules*—This is tolerated better than the solution. Various doses were given in the 53 cases treated. Of these 47 were suffering from *S hæmatobium* infection and 6 from *S mansoni* infection of the intestine.

A—Seventeen cases with *S hæmatobium* infection received a daily dose of 0 1 g of trypaflavine in capsules for a period varying from 7 to 20 days, giving a total amount of 0 7 to 2·0 g. Microscopical examination of the urine at the end of the treatment showed living ova in all cases Weekly examination was carried out in several of these cases after treatment for a period of 1–3 weeks with the same result

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B —Thirteen cases with *S hæmatobium* infection received a daily dose of 0 2 g of trypaflavine in capsule for 3–20 days, giving a total amount of 0 6 to 4 0 g of the drug At the end of the treatment there were living ova in the urine of all the patients Re-examination was carried out at the end of the week in six cases, and all were positive for living ova except one In this patient, however, only a single ovum had been discovered before and at the end of treatment

C.—Five cases with *S hæmatobium* infection received a daily dose of 0 3 g of trypaflavine in capsule for 1–3 days, because of vomiting the dose was then reduced to 0 2 g daily, and this was continued from 2–16 days These cases received a total amount of 0 7 to 3 8 g of trypaflavine, and in all of them living ova were found at the end of the treatment One patient was re-examined a week later and living ova were again found

D.—Twelve cases with *S hæmatobium* infection received a daily dose of 0 5 g trypaflavine in capsule for a period varying from one to two days All the patients had severe vomiting The daily dose was reduced to 0 3 g and this was given for 1–4 days Vomiting recurred in all cases and the dose was further reduced to 0 2 g daily This was given for 1–10 days The total amount of the drug given in this series varied from 1 to 3 9 g Examination of the urine at the end of the treatment revealed living ova in all cases Five patients presented themselves at weekly intervals after the treatment for 1–4 weeks, and living ova were found in all of them One patient who received 3 9 g of the drug developed fissuring of the nails of both hands The nails became very loose and tended to separate from the underlying tissues

E.—Six cases with *S mansoni* infection of the intestine received a daily dose of trypaflavine 0 1–0 3 g for 5–27 days The drug was given in capsules, and the total amount varied from 1 5 to 6 g Two of the cases had also a urinary infection with *S hæmatobium* The ova were unchanged at the end of the treatment except in one case which was found to be negative on two occasions but re-examination two days after the end of the treatment revealed living ova *S mansoni* ova are not easy to find in the stools, especially if the infection is not severe

2 *Trypaflavine in solution given orally* —Three cases were thus treated They received 20 c cm of 2 per cent solution in water daily—i e , 0 4 g This was not tolerated and caused vomiting, and the dose was reduced to 0 2 g Living *S hæmatobium* ova were found in the urine at the end of the treatment In one case re examinations were made weekly for two weeks after the end of the treatment with the same result

3 *Trypaflavine given by intravenous injections* —Fourteen cases, all infected with *S hæmatobium*, were treated by this method

A 2 per cent solution was used and an injection of 10 c.cm was given daily for 4–10 days Each patient received 0 8 to 2 g of the drug Examination of the urine at the end of the treatment revealed living ova in all except the patient who received 2 g his urine, however, was negative after the fourth injection Re-examination during the following 21 days revealed no ova, but they had been very few from the beginning

Weekly re-examinations were made in seven cases for periods of 1–4 weeks In one case living ova were always found In two cases no ova were found on two successive occasions. In one case living ova were found after one week, and then no ova were found on the following week In another case living ova were found after one week and no ova were found on the following week, and then ova appeared again one week later In another case no ova were found 18 days after the end of the treatment and also after 23 days, but they appeared and were living at the end of one month In the last case two weekly re-examinations revealed no ova but living ova were found in the third week

It may be noted that in this series the cases were not selected, and some of them had very few ova and this led to the occasional inability to find ova Schistosoma ova do not pass regularly in the excreta This question is studied and discussed in the Second Report of the Research Institute, 1932 (p 31), and also in the Third Report, which is now in publication

4 *Diamino methyl acridine* (May and Baker) was used in seven cases —

A —Five cases of *S hæmatobium* infection were given a daily dose of 0 1 g in capsule They received from 4–15 doses amounting to a total of 0 7 to 1 5 g Microscopic examination of the urine at the end of the treatment revealed living ova in all of them

B.—Two cases of *S mansoni* infection were given capsules containing this drug The first patient received 0 1 g daily for 13 days and living ova were still passed at the end of the treatment The second received 0 1 g daily for seven days, and 0 2 g daily for two days and 0 3 g daily for six days (total of 2 9 g in 15 days) Living ova were found at the end of the treatment

5 *Atebrin* (alkylamino-alkylamino acridine dihydrochloride) was employed in four cases Three received 0 3 g daily for 16 days, and one received 0 4 g daily for four days The cases were infected with *S hæmatobium*, and living ova were found in all of them at the end of treatment A galactose liver function test at the end of treatment with 4 8 g of atebrin showed no disturbance

OTHER OBSERVATIONS

A symptom observed during the treatment with these acridine compounds was erythema of the face, appearing especially after injections of trypaflavine, and this led finally to desquamation Vomiting occurred with the bigger doses of the drug, it was relieved by stomach wash A few patients developed diarrhœa and a few collapsed Two developed fissuring and incomplete separation of the nails. A liver function test with galactose was done after a course of 20 capsules (total 4 g trypaflavine) in three cases No disturbance in function was observed

Fisher states that in in vitro experiments the drug "was rapidly lethal to bilharzial cercaria in high dilutions in the presence of human blood-serum" Dr Ali Hassan, biochemist of the Research Institute, found that cercariæ of *Schistosoma mansoni* lived for three hours in a dilution of 1 in 4000 trypaflavine in diluted human serum (in 2 of saline) Schistosoma ova in the urine of cases under treatment hatched when the urine was diluted with a weak solution of trypaflavine, and the miracidia remained living for two hours

It may be stated that the observations of Fisher were made on cases infected with an undetermined species of schistosome—as he says of the *hæmatobium* group Although so far all species of schistosomes in man have reacted in the same way to drugs the species treated by Fisher may be peculiarly susceptible to acriflavine

CONCLUSIONS

Trypaflavine and other acridine compounds have been used in the treatment of schistosomiasis due to *S hæmatobium* and *S mansoni* without any curative effect These drugs can be tolerated in fairly big doses extending over 20 days without damage to the liver functions In vitro, in dilutions of trypaflavine corresponding to those produced by therapeutic doses in man, the cercariæ and miracidia of these two species of schistosomes can live for a fairly long time

NOTES ON BRONCHOSCOPY

WITH EXAMPLES OF ITS APPLICATION

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THIS paper reports cases of certain diseases in which bronchoscopy has been employed with usefulness in diagnosis or treatment. Except for those of benign growth, which are rare, each of these examples is one of a large group.

BRONCHIAL CARCINOMA

Two cases are recorded as being typical of a condition which is commoner than is generally realised.

CASE 1—A. B, an engineer aged 59, was admitted to the Royal Chest Hospital under Dr A W. Stott on Sept. 18th, 1931 Symptoms. cough, old standing, but worse for five weeks; sputum scanty, but blood streaks twice, pain, dull and slight over heart on walking fast, dyspnœa on exertion for three months. He was a thin nervous man, in fair general condition, with clubbed fingers The trachea was slightly to left, but there were no stridor, no glands, and no prominent veins Chest: wasting and poor movement on left side, percussion note poor left upper lobe; vocal fremitus slightly diminished left upper lobe, breath sounds harsh and bronchial at left apex, absent or diminished over rest of lung Sputum: no tubercle bacilli found, no cancer cells (Sept 23rd); "one plaque of cells are suspiciously like carcinoma" (Sept 26th) Radiography (Sept 24th): complete collapse, left lung, compensatory emphysema right lung; stenosis left main bronchus (Fig 1).

Bronchoscopy—Avertin Mass filling left bronchus just beyond entrance. Red, irregular surface Bleeds easily. Piece removed Section columnar-celled carcinoma, papilliform in structure, and very vascular.

CASE 2—C D, a man aged 43, a gas fitter, was admitted to the Royal Chest Hospital under Dr. James Maxwell on Nov 14th, 1928 Symptoms. well till August, 1925, when he had pleurisy on the right side, cough, persistent night and day, sputum, scanty but blood-stained, pain, over right clavicle, shooting to right ear; dyspnœa; night sweats, no hoarseness, no loss of weight. Examination. chest expansion good, no inequality; pulsation in lower part of neck below sternum, percussion note impaired right apex front and back, vocal resonance and vesicular murmur diminished right apex anteriorly, increased posteriorly. Sputum: no T.B, "many cylindrical bronchial cells, some distorted and not ciliated . . . some groups of large cells of irregular shape which may have been shed from a growth" Radiography (Dec 4th). appearances suggest a neoplasm of right upper lobe (Fig 2)

Bronchoscopy—Left bronchus normal Right bronchus narrower, slit-like opening No growth seen in either bronchus. Trachea shows slight indentation of the right wall just above bifurcation No pulsation. No ulceration. No infiltration

Exploratory thoracotomy (Mr J B Hunter) Dec 17th, 1928. piece removed, section showed no carcinoma.

Second bronchoscopy (Dec 11th, 1930) avertin Large lobulated mass to be seen at upper opening of right bronchus, protruding into trachea Probably upper end of a large growth Piece removed. Section carcinoma, squamous cell type

Of 20 consecutive cases sent for bronchoscopic examination with a strong presumptive diagnosis of bronchial carcinoma, 12 yielded specimens which were positive on microscopical examination, and 8 were negative Of the 8 negative cases, it is fair to assume that some are mistaken diagnosis, and in fact one or two of them show a subsequent history which throws some doubt The notes show that one of them underwent a tonsillectomy with benefit exactly three years after the original negative bronchoscopy! On the other hand, one case yielded no result with the bronchoscope and proved positive on exploratory thoracotomy, obviously a peripheral growth. Again, one case was negative in 1928 and positive in 1930. This case had been negative at thoracotomy in 1928.

Since the histological examination is the only conclusive test, and since the findings are positive in so large a percentage of cases, it follows that bronchoscopic examination of every suspected case is essential The technical difficulties are not great except in cases of unwilling patients, and it is astonishing how few these are, even for repeated bronchoscopies

In this series a routine examination was done for the presence of carcinoma cells in the sputum It was negative in 14 cases, and only vaguely positive in 1. A characteristic report is "one plaque of cells suspiciously like carcinoma." In this same case the same pathologist (Dr. Norah Schuster) reports of the bronchoscopic specimen "columnar-celled carcinoma, papilliform in structure and very vascular"—a striking contrast The X ray examinations, which are invariably and repeatedly done in these cases, all show the mechanical changes which suggest a blockage of a bronchus by something, and carcinoma is mentioned as a definite diagnosis in 13 cases Of these 13, 8 corresponded with a positive bronchoscopic finding. Of the remaining 5 positive on X ray but negative with the bronchoscope, 1 case showed presence of a peripheral growth on thoracotomy. In 4 cases which were positive by bronchoscopy, no suggestion of carcinoma was made by the radiologist

In looking through these cases, it is manifest that by far the most important diagnostic method is the comprehensive clinical examination, but it is submitted that of the auxiliary methods, bronchoscopy holds at least as high a place as any other It is not the purpose of this paper to discuss treatment of malignant growths, but it is evident that, whatever form this takes, bronchoscopy will be an essential part in establishing the necessary positive diagnosis and in introducing intrathoracic applications which seem to be a logical development.

BENIGN GROWTHS

CASE 3—E F., a man aged 59, an accountant, was admitted to the Royal Chest Hospital under Dr Sir Symptoms: six months' increasing shortness of breath causing "gasping" on exertion; tightness of the chest worse when bending over the chest at work, some sputum and an occasional clot of blood noticed in sputum during last two or three years, no pain in no dysphagia, loss of weight, one stone in two. Examination: no physical signs of disease found in except that there appeared to be a slight impairm note and weaker breath sounds over the left upper of the chest in front, general condition fair, a sus of cyanosis; marked inspiratory stridor

Bronchoscopy showed a smooth rounded growth very slightly with each respiration and apparently att to the front of the trachea about an inch above bifurcation. After applying adrenaline, the pedicle defined and grasped with crocodile forceps and the gr was delivered with some difficulty through the gl *owing to its size (Fig 3)* Recovery was immediate complete Section: cellular fibroma

CASE 4—G H., a carpenter aged 24, admitted to Royal Chest Hospital under Dr H B Day in Janu 1928 Symptoms recurrent attacks of cough wh started three years previously and were accompanied hæmoptysis General health good, nothing sugges in family or past history Chest no impairment movement nor of air entry, coarse rhonchi upper left chest, intensified after coughing; distinct irrita behind inner end of the left clavicle Sputum no T

Radiography no evidence of pulmonary tuberculosis, bronchiectasis, or other diseases

At a later visit he complained of irritating cough and hoarseness This was found to be due to a papilloma which had made its appearance on the vocal cord. The papilloma was removed by operation and the hoarseness disappeared, but some eight weeks later the patient came back saying that he had coughed up some pieces of "gristle," and in October he had several attacks of slight hæmoptysis and some fever A piece of the material coughed up was secured and on section proved to be a papilloma

Bronchoscopy—In November, 1928, multiple small papillomata removed from trachea, and a fortnight later the main growth was found and removed from the bronchus (Fig 4) There was considerable relief until September, 1929, when symptoms and signs recurred He was readmitted and a recurrent growth half an inch in diameter was removed from the left bronchus Complete recovery followed this operation, and the patient was seen in January, 1931, apparently free from trouble

Thus case may be regarded as a demonstration of the ease with which pieces of papilloma may implant themselves on mucous surfaces after detachment from a parent growth

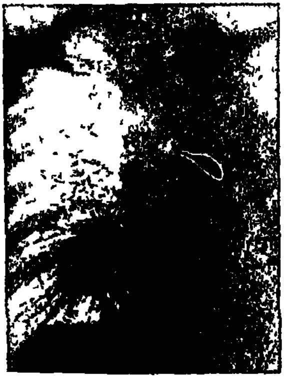

FIG 1 (Case 1)—Radiogram showing collapse of left lung due to stenosis of left main bronchus Lipiodol has filled the bronchial tree on the right but has been held up on the left (as indicated by the white line)

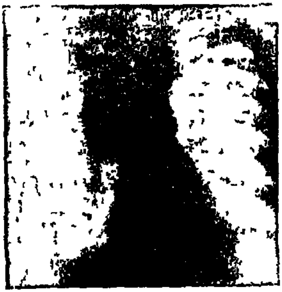

FIG 2—Radiogram of chest in Case 2 Suggestive of neoplasm of right upper lobe

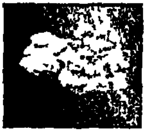

FIG 4 (Case 4)—Papilloma removed from bronchus (actual size)

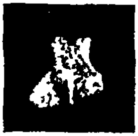

FIG 5 (Case 5)—Piece of mutton bone removed from bronchus (actual size).

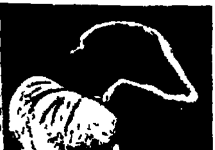

FIG 3 (Case 3)—Fibroma removed from a bronchus (actual size)

Records of benign tumours of the tracheo bronchial tree are rare but it is doubtful if they are as uncommon as is generally assumed and more frequent bronchoscopic examinations will probably reveal a much higher incidence A comprehensive collection by Ellen J Patterson as late as June, 1930, comprises 26 cases in all Ten of these were diagnosed post mortem and 16 by the bronchoscope Some of these cases could fall into the class of inflammatory swellings, but since the mechanical effects are the same it is practical to group them with the benign growths The extent to which these growths may be removed by bronchoscopy is an interesting consideration Certainly many benign tumours can be completely removed Inflammatory masses can be reduced enough to promote drainage and influence secondary lung changes Some tumours of lesser malignancy can on occasion be treated

FOREIGN BODIES IN BRONCHUS

CASE 5—I J, a man aged 39, was admitted under Dr Lisle Punch to the Royal Northern Hospital In June, 1932, he had "swallowed the wrong way" while drinking soup containing mutton bones Two days later the chest was sore and he was seen by his doctor X ray report in July was "bronchitis" Patient then went back to work Since then the condition has remained the same—i e, occasional pain in the chest, coughing attacks, and plentiful yellow sputum No blood No loss of weight Sleeps well and does his usual amount of work as a motor mechanic Previous history pleurisy four years ago, said to have had chest trouble during the war Chest: good movement no abnormality of percussion note, air entry good, a few crepitations at left base in front, and in the right axilla, wheezing rales and crepitations and tubular breathing; vocal fremitus normal There was a large dental abscess in connexion with a left upper molar root and quantities of pus discharged from the cavity This focus was probably responsible for a large proportion of the pus brought up

Bronchoscopy—Avertin After extraction of the dental root and cleaning up of the gum sepsis a large piece of mutton bone was removed from the distal end of the right bronchus Recovery was complete and immediate

The foreign body in this case (Fig 5) was of considerable size, but owing to the length of time it had been in the lung it had become decalcified and did not show on the skiagram (Fig 6) The photograph shows inadequate entry of lipiodol into the bronchial passages of the right lung The history and the clinical examination made the diagnosis fairly certain.

LUNG ABSCESS

CASE 6.—K L., aged 33 a [illegible] Admitted to the Royal Chest Hospital on Jan 20th, 193[illegible] under Dr Maxwell Symptoms: four weeks before admission he had sharp stabbing pain in the right side of the chest made worse by breathing and coughing; cough increased and he began to bring up copious [illegible] which was tough and offensive; since then his progress has been "up and down"; there is slight dyspnœa and night sweats Sputum: no T.B. Radiography (Dec. 30th, 1930): abscess posterior part of the right lower lobe at the level of the seventh interspace behind; lipiodol has not got into cavity (Fig. 7).

Bronchoscopy (Jan. 2nd, 1931): pus aspirated. Two days after the bronchoscopy the abscess was evacuated through the bronchus. See temperature chart (Fig 9). Radiography (Jan 27th) considerable fibrosis right lower lobe, dilated bronchi, no definite abscess (Fig 8).

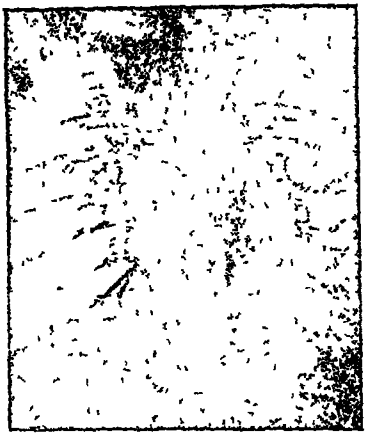

FIG 6 (Case 5)—Lipiodol has not entered the bronchioles of the right side There is obstruction in the right bronchus by a piece of bone.

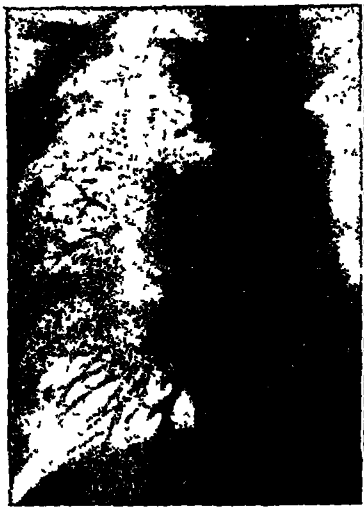

FIG 7 (Case 6)—Abscess in right lower lobe No lipiodol enters the cavity

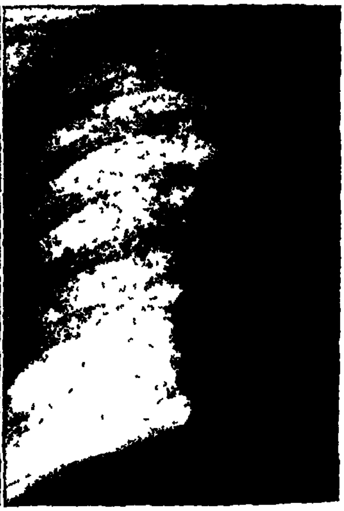

FIG. 8—Condition 25 days after bron choscopy. No definite abscess visible.

As is to be expected, it is unusual to be able to penetrate into the abscess cavity itself because of the surrounding fibrosis. Nevertheless the emptying and dilatation of the surrounding bronchi is of paramount importance, as is shown by this case. The relation between bronchoscopy and evacuation of an abscess has been repeatedly demonstrated. Even in cases where the abscess is peripheral, it is of the greatest help to establish drainage of the bronchi by bronchoscopy.

ASTHMA

CASE 7.—M. N., a schoolboy aged 13. Despite treatment with old tuberculin which had caused some improvement he was having attacks of asthma every day Bronchoscopy was done under avertin on March 5th, 1931. "Mucosa normal. Bronchi filled with mucoid secretion. This was aspirated and the larger bronchi dilated with forceps." On the 6th he had a fair night; he began to wheeze, but did not have a definite attack and it ceased quite suddenly, which was not the experience in previous attacks. March 27th: keeps free from attacks. April 4th: attacks last three nights

There are cases of pure asthma in which the continual attacks seriously undermine the patient's general condition. The reported case shows that bronchoscopy can definitely give a much needed rest. Whatever the causative factors be, there is no doubt that in asthma the presence of thick gelatinous plugs of mucus in the bronchial openings plays an important part in the frequency and severity of the attacks. These plugs can be aspirated by the aid of a powerful suction pump. A difficulty is encountered in these cases—namely, that patients who have been under treatment a long time have often been heavily dosed with sedatives, and it is difficult, by premedication, to get them into that condition of mental calm which is desirable for satisfactory bronchoscopy under local anæsthesia.

SYPHILITIC TRACHEAL STENOSIS

CASE 8.—O P., a woman aged 47, was admitted to th Royal Chest Hospital on Feb. 21st, 1933, under Dr Saxb Willis. Symptoms: cough and mucopurulent sputum three years; occasional streaking; increasing dyspnœa, marked stridor. On admission nothing abnormal wa found in heart and lungs, except defective movement o the right diaphragm and dilated veins in the right chest Sputum: no T.B.; no cancer cells Wasserman examination: strongly positive. Laryngoscopy (Feb. 16th) larynx normal; clot of blood seen on wall of trachea one inch subglottic; probably tracheal stenosis.

Bronchoscopy (Feb. 23rd).—Avertin. Narrow stenos of trachea about 20 cm. from front upper teeth. "It i caused by lesions within the trachea, but ? accentuat by pressure from outside on the left. Tracheal lesions granulomatous especially on soft posterior wall. M Difficult to get a specimen without endangering the of the tracheal wall. Probably syphilitic." Sectio tissue covered with stratified epithelium, under which cellular infiltration suggesting inflammation, but th is no indication as to nature. No tubercles; no changes; no evidence of new growth.

This is a very unusual case in which an diagnosis has been made. Early treatment is to have a profound influence on its course T changes which would have occurred as a sequel t the very high obstruction would have been importa and extensive. In this case the Wassermann reactio was suggested by the bronchoscopic findings.

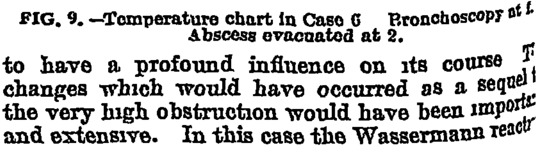

FIG. 9.—Temperature chart in Case 6 Bronchoscopy at 1. Abscess evacuated at 2.

I may add in conclusion that many cases of bronchie tasis are very materially helped by periodical aspiratio

I am much indebted for permission to publish the cases to the physicians who have referred them me, and to Dr. Peter Kerley for his radiograms.

THE NATURE AND TREATMENT OF ACUTE OSTEOMYELITIS

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For many years my treatment of acute osteomyelitis was conservative and somewhat unorthodox The majority of patients presented themselves in hospital with pus under the periosteum I evacuated the pus and did not interfere with the bone Many patients required secondary operations for removal of sequestra The great majority made good recoveries after illnesses of varying duration In the occasional early case pus was sought for in the bone, according to text-book instructions, but results were perhaps less happy An average of two or three cases a year did not stimulate me to take any particular interest in the subject

In the year 1928, when perusing the *Proceedings* of the Royal Society of Medicine,[1] I was staggered to read the following mortality figures from a well known London hospital quoted at a discussion on the treatment of acute osteomyelitis —

	Recovered	Died	Total
Femur	1	5	6
Tibia	3	1	4
Fibula	1	2	3
Humerus	3	2	5

The surgeon who quoted these figures advocated an extensive guttering operation My interest was aroused, and from that time I have devoted much time and thought to the subject The conclusions I have reached are embodied in this paper

Before proceeding it is only fair to state that at a later discussion at the Royal Society of Medicine,[2] there were many advocates of more conservative methods Others, however, stoutly maintained their belief in drastic surgery

NATURE OF OSTEOMYELITIS

Scientific treatment of any disease should be based on a sound conception of its nature Mastoid disease, for example, is a local extension from the middle ear, and eradication of all infected bone will prevent spread to the system Acute osteomyelitis in my opinion is a local manifestation of a systemic infection, which may be so virulent as to kill the patient within a few days or so mild as to result only in the formation of a Brodie's abscess There is nothing new in this proposition, but I will illustrate it by quoting three cases Its application as a basic principle appears to have been neglected

Cases 1 and 2 *Acute staphylococcal septicæmia* —1 A boy, aged 14, at a large public school, reported sick one Saturday night, feeling unwell and complaining of pain near the knee On Sunday there was a little local tenderness On Monday morning he was seen in consultation His temperature was 104° F and pulse rate 140 He seemed to be slightly delirious There was a somewhat tender, red, œdematous area over the head of the left tibia An unfavourable prognosis was given Conforming with orthodox treatment, the tibia was explored with a very small gouge Serum only was obtained Culture from this gave a profuse growth of *Staphylococcus aureus*, and the same organism was recovered from the blood The patient died within 48 hours

2 A well built public-school boy, aged 17, had recently suffered from a large boil on the forearm On Tuesday he did not feel well and complained of pain in the chest and thigh On Thursday he was seen by a doctor, his temperature was high and respirations were rapid Influenza was suspected On Saturday the chest condition was clearing up The right thigh was swollen and tender high up in the adductor region His temperature rose to 104° at night and he became delirious He was seen in consultation on Sunday and an operation was performed An incision was made high up in the adductor region and some deep-seated pus evacuated Patient was not relieved by the operation Two days later he had signs of acute septic pneumonia and also acute cystitis He died three days after the operation

Case 3 *Staphylococcal septicæmia with late formation of bone abscess* —A man, aged 41, was admitted to hospital complaining of abdominal pain and vomiting and also of severe headache He had suffered from boils for some months His illness had started, eight days before admission, with a shivering attack followed later by diarrhœa and vomiting His temperature on admission was 102 6°, rising next evening to 104°, and falling to normal in the course of a week No abnormal physical signs were elicited *Staphylococcus aureus* was recovered from the blood a few days later He remained in hospital about six weeks Five months later he was readmitted complaining of aching pain in the left leg, which had been present for some weeks Radiography showed an abscess cavity in the shaft of the fibula This was dealt with by operation.

It is of course common knowledge that, even after efficient drainage of an infected bone, the temperature may continue high Pyæmic abscesses may appear in different parts of the body after an interval of months or even years.

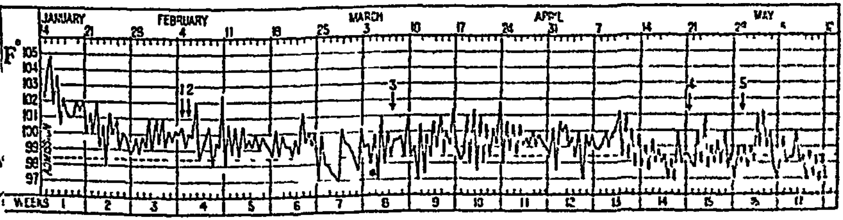

FIG 1 (Case 3)—Temperature chart from January to May 1 = radiographed 2 = application of abduction frame 3 = removal of abduction frame application of Thomas's splint 4 = removal of Thomas's splint 5 = application of plaster spica.

EARLY OPERATION

Writers of modern text books agree that acute osteomyelitis is a blood borne disease In no book that I have consulted is any delay in operative treatment countenanced once a diagnosis has been made The extent of the operative interference advised appears to vary from incision of the periosteum to guttering of the bone Starr, writing in the "Practice of Surgery,"[3] says —

> "Immediate treatment should be instituted as soon as a diagnosis has been made The first principle of treatment is to relieve the tension beneath the periosteum and in the cancellous area of affected bone"

That early operation does not cut short the general septicæmia is well illustrated by the following case :—

Case 4 —On June 10th, 1929, a boy aged 8, living under the best conditions, was seen in consultation A month previously he had had a boil on the thigh On June 8th he complained of pain above the left knee On June 9th the pain was worse and he was kept in bed On June 10th his morning temperature was 105° F and the pulse- and respiration-rates were rapid The left knee was held semiflexed Considerable pain was caused by deep pressure in the region of the adductor tubercle Acting on accepted principles, immediate operation was undertaken The popliteal surface of the femur was exposed and a little sero-pus found under the periosteum. A small hole was made into the cancellous bone, revealing small foci of pus The wound was drained Two days later there was no pain in the knee, but the patient's temperature ranged about 102° F. with a pulse-rate of 140 On June 16th the temperature was 102° F, the pulse-rate 120, the respiration-rate 44 A subcutaneous abscess had developed in the forearm and there was arthritis of the left elbow Pyrexia continued at a lower level On July 31st sero-fibrinous fluid was evacuated from the right elbow-joint In December an abscess had formed in the lower end of the right tibia In March, 1930, sero-pus was evacuated from the left shoulder-joint. To cut a long story short, this boy continued, with only brief apyrexial periods, to show an evening rise of temperature to about 100° or 101° for over four years. During that time he underwent many minor operations at the hands of various surgeons The worst complication was an infection of the left knee-joint which ended in ankylosis. The patient is now, more than four and a half years after the onset of his illness, beginning to get about.

CONSERVATIVE TREATMENT

At one time it was customary in streptococcal empyema for operation to be carried out as soon as pus was discovered The majority of the patients died Later, more conservative measures came into vogue, patients had a chance to develop some degree of immunity, and many lives were saved It is my considered opinion that the same principle should be applied to staphylococcal infections When a patient is seriously ill and local signs are not well marked, expectant treatment should be instituted. In most cases some improvement in the patient's condition will take place in a few days. At this stage, provided that there is definite evidence of pus formation, operation may be performed If pus is found under the periosteum the bone is not interfered with. The wound is left open and packed with gauze impregnated with B I P P. Adequate splintage of the limb is instituted from the first

My experience goes to show that it is a fortunate event that many patients do not reach hospital until they have been ill for a week or more and obvious pus is present. Some of these patients will have developed sufficient immunity to withstand extensive guttering of the bone or even diaphysectomy. These will furnish sufficient brilliant recoveries to encourage the advocates of heroic surgery. Others succumb after operation

The following cases illustrate the results of conservative treatment :—

Case 5 —A boy of 15 was admitted to hospital on Jan. 14th, 1932. Ten weeks previously he had had a boil on the neck. Three days before admission he had a bad headache, followed by pain in the upper part of the right thigh which had become steadily worse On admission his temperature was 102° and pulse-rate 104. He was a thin boy, and in considerable pain Any movement of the right hip-joint caused pain, and there was some fullness to the outer side of the upper end of the sartorius with tenderness on pressure Expectant treatment was instituted At first a Liston's splint was used to steady the limb, and on Feb 5th an abduction frame was substituted His temperature was then on the down grade and pain was less On March 7th a Thomas's knee-splint was substituted for the abduction frame and was removed on April 21st, when there was no pain but fibrous ankylosis of the hip-joint X ray examination showed much thickening of the upper half of the femur A plaster spica was applied on April 29th and removed on June 18th. The patient's condition was then good, and he was gaining weight.

On Jan. 7th, 1933, a small abscess had formed in the upper part of the thigh, 4 inches below the anterior superior iliac spine. On Jan. 10th the abscess was opened and a little necrotic material evacuated A sinus appeared to lead to a small cavity in the outer side of the bone

This case is noteworthy in that, in spite of extensive periosteal thickening and ankylosis of the hip-joint, there was no pus formation until a year after the illness started. The abscess which formed then was trivial I feel sure that early operation would have made matters much worse and might have been fatal.

Case 6 —A boy, aged 12, was admitted to hospital on Sept. 13th, 1933 Three days previously the right foot had begun to swell and itch On admission his temperature was 103° F and his pulse-rate 144 The right foot was red and swollen, and there was a blotchy rash on the right upper arm and left buttock. The swelling of the foot subsided and, two days after admission, the upper half of the left leg became red and swollen The boy was now desperately ill, with an almost imperceptible pulse On Sept 20th I asked the house surgeon to incise the leg. The boy's condition was still so bad that the only anæsthetic he dared to use was a local spray of ethyl chloride On Sept. 21st a small residual abscess was opened on the dorsum of the right foot The pus yielded *Staphylococcus aureus*. On Sept 24th two small abscesses on the back were opened. The boy slowly recovered and went home on Dec 12th. Radioscopy showed much periosteal thickening of the tibia, and there is still a small sinus There is also a small sequestrum in the head of the third metatarsal.

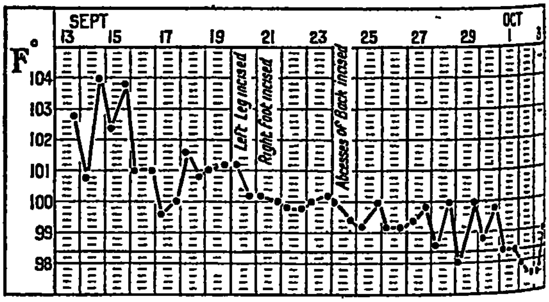

FIG. 2 —Temperature chart in Case 6

Case 7 —A boy, aged 4, who had been ill at home for three weeks, was admitted, for what reason I know not, to the medical side of the hospital. He had complained of pain in the right groin for three weeks and swelling for a few days On admission his temperature was 100° F and his pulse-rate 160 The right thigh was held abducted and movement caused pain Radiography showed an area of necrosis in the neck of the femur. His temperature fell to normal in two days I saw him a week after admission, incised an abscess in the upper part of the thigh, and fixed the hip joint in plaster The pus from the abscess yielded *Staphylococcus aureus* The sinus healed in a few weeks The plaster was removed at the end of six weeks and soon afterwards he went home Now, three months later, the sinus is still healed X ray *examination suggests that a small sequestrum may be in process of absorption*

The value of a system of treatment must be judged by results Osteomyelitis is not sufficiently common to allow opportunity for any individual surgeon to treat an adequate number of cases Before quoting figures my attitude with regard to treatment requires a word of explanation

For many years before I had heard of Dr Starr it was my custom to refrain from opening the bone if pus was under the periosteum The force of traditional teaching was so strong that, until about two years ago, in cases seen early I penetrated the bone in search of pus This, I am now convinced, is wrong when the patient is seriously ill From the last ten years I have records of 31 personal cases, with 3 deaths Two of these deaths occurred in cases of acute septicæmia already recorded As in both cases early operation was performed, they cannot be used in argument against expectant treatment Death would probably have occurred in any event The other fatal case was a girl, aged 8, who had been ill for a week before admission with osteomyelitis of the humerus Pus was evacuated by a periosteal incision Later she developed acute suppurative arthritis of the hip-joint which proved fatal

In this series of cases, omitting the two cases of fatal septicæmia, the bones primarily affected were as follows —

Femur	10	Tibia	9	Humerus	2
Fibula	1	Radius	2	Ulna	1
Clavicle	1	Os calcis	1	Pelvic bones	2

In 4 cases an abscess had burst or been opened before admission In every one of these cases an operation was performed for removal of a sequestrum In the remaining 25 cases the primary operation was in 18, simple incision of the periosteum , in 2, exploration of the bone in search of pus , in 5 evacuation of a localised abscess in the bone In the majority of the cases one or more secondary operations were required for removal of sequestra, usually small Such operations should involve no mortality In cases in which a joint becomes infected I employ, with good results, irrigation of the joint as recommended by Cotton [4] The series includes two adults One (Case 3) has already been mentioned The other case is a nurse, who developed a small abscess in the cortex of the femoral shaft This was an interesting case, but perhaps should not be classed as one of acute osteomyelitis The same criticism applies to Case 3

SUMMARY

(1) Acute osteomyelitis is a local manifestation of a systemic infection and should be treated as such (2) In the early stage of the disease expectant treatment should be instituted until there is definite evidence of pus formation (3) In most cases incision of the periosteum is all that is necessary at the primary operation

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2 Ibid , 1931 xxv 517
3 Starr C : Practice of Surgery, London 1924, vol. II , p 2
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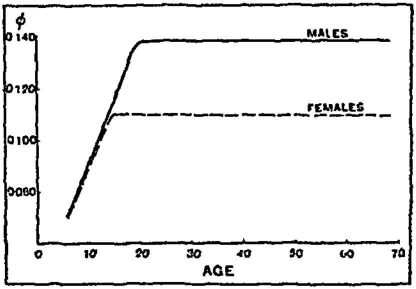
THE IMPEDANCE-ANGLE TEST FOR THYROTOXICOSIS

A STUDY OF THE IMPEDANCE ANGLE IN THE NORMAL CHILD

By M A B Brazier, Ph D , B Sc

(*From the Central Pathological Laboratory of the London County Mental Hospitals*)

The impedance-angle test having proved of value in the diagnosis of toxic conditions of the thyroid gland in adults,[1] it is proposed to extend this method to the investigation of the occurrence of goitres in children A preliminary study of some normal children revealed the fact that the impedance angle is high in childhood and apparently decreases with increasing age It became quite clear that before the impedance angle test for thyrotoxicosis could be applied to children an extensive study must be made of the normal child at different ages so that normal values could be established



The following study of a group of children of both sexes between the ages of 6 and 14 was therefore undertaken to set up the normal standards In a previous work [2] it has been shown that in the normal adult there is a marked difference in the mean value for the impedance angle for each sex Recent figures * indicate these means to be :—

Males (35) $\phi = 0.138 \pm 0.002$ } Standard deviation = { 0.012
Females (33) $\phi = 0.110 \pm 0.001$ } { 0.010

($\phi = \frac{1}{2}\pi$ - impedance angle)

This difference between the two sexes is not found in children All children, however give a low ϕ, but this increases with age The general form for the relation between ϕ and age appears to be that shown in the accompanying Figure

The low ϕ—i e , high impedance angle—of children is of interest in view of the work of Cooper [3] whose histological study of human thyroids at different periods of life revealed the resemblance of the histological picture of the adolescent gland to that seen in thyrotoxicosis As has been previously shown [1 2] high impedance angles are associated with thyrotoxicosis The basal metabolic rate of children is also high and decreases with age (Boothby and Sandiford [5]) but in this case there is also a sex difference

One might at first suppose the decrease of impedance angle with age to be due to the change in the physical dimensions of the child A detailed study, therefore, of a group of 41 normal children between the ages of 6 and 14 was undertaken for the purpose of determining what physical factor, if any, was predominantly responsible in determining the value of the impedance angle.

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* These figures may be taken as more reliable than those [illegible]

For this group of children there were recorded the values of the impedance angle, resistance (to alternating current), age, forearm length, and elbow to elbow measurement The forearm length may be taken as a rough indication of the area of the arm immersed in the saline electrode, while the elbow to elbow measurement represents approximately the length of the electrical path through the body. When these various relations were plotted as graphs there was seen to be a marked tendency for several of the pairs of properties to vary in a related manner.

A statistical analysis of the data was therefore made in order to determine which of these apparent correlations was in fact the true one. The correlation coefficients for the various possible relationships are given in Table I. Table I. (*a*) shows the total correlation coefficients for the data as observed, while Table I. (*b*) shows the partial correlations between any two of the quantities, the remaining quantities being held unchanged.

TABLE I (*a*)

—	A C resistance	Age	Forearm length	Length of body path
Impedance angle	+ 6135	— 5825	— 4582	+ 0244
A C resistance .		— 6907	— 6499	— 1696
Age.			+ 8656	+ 9423
Forearm length	.		..	+ 8259

It will be seen that all the total correlations, except those between the length of body path and impedance angle or resistance, are significantly high.

From these figures, however, it is possible to calculate the partial correlation coefficients which exhibit the correlation between any two variables on the basis that all the other variables are held constant In this way there is eliminated the risk of attaching significance to a total correlation which is only the result of two successive partial correlations The partial correlation coefficients are given in Table I (*b*)

TABLE I (*b*)

—	A C resistance	Age	Forearm length
Impedance angle	+ 381	— 314	+ 179
A C resistance	.	— 172	— 198
Age .	.		+ 767

These partial correlation coefficients show that apart from the high correlation between age and forearm length which is to be expected in normally growing children, the only coefficients which do not become negligibly small on analysis are those between impedance angle and age and between impedance angle and resistance The connexion between impedance angle and resistance may suggest that the reactive component is holding constant and that any change in impedance angle is only due to a corresponding change in resistance. This, however, can be disproved by a statistical study of the partial regression coefficients

The result, therefore, shows that the change of impedance angle with age cannot be attributed to some superficial factor such as the increase in the size of the arm immersed, or the increase in size of the body traversed by the current, but must be due to some physiological change taking place with increasing age This independence between impedance angle and the shape and size of the dielectric is a confirmation of the view already put forward [2] that the dielectric under observation cannot be the skin alone, and that the impedance angle must relate in some way to the body as a whole treated as a dielectric.

SUMMARY

In order to extend the use of the impedance angle test for thyrotoxicosis to the diagnosis of thyroid dysfunction in children, a study has been made to set up the normal standards for children of both sexes

This research was carried out under the direction of Dr F. L Golla to whom the author's thanks are due The author is also indebted to Dr. M Creak and Dr. F. Pilkington, of the Maudsley Hospital, for the opportunity to examine this group of children, and to Dr. L G Brazier for help and advice in the statistical analysis

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Clinical and Laboratory Notes

TUMOURS OF THE TESTIS IN TWO BROTHERS

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MALIGNANT disease is uncommon in the testis compared with other regions of the body. Tanner[1] found that a testicular neoplasm occurred once in every 2000 males admitted to hospital; Southam and Linnell[2] state that it occurs once in every 15 males admitted to hospital with a surgical condition This being so, it must be exceedingly rare to encounter it in two members of a family; and in fact I have not been able to find a record of this happening except in uniovular twins

CASE 1 —I am indebted to Mr. C H Fagge for all me to publish this case which was under his care at G Hospital The patient, a male aged 18, was admitted in June, 1923, for a right inguinal hernia which was successfully operated on Some four weeks later he noticed that his right testicle began to enlarge, and in January 1924, when he was readmitted, it was the size of a cricket ball, hard and trilobed A large hard lymphatic gland was palpable immediately below the spine of the os pubis There was a large mass in the right iliac fossa which could be traced upwards along the midline above the umbilicus to the liver The superficial veins of the abdomen were conspicuous, and there was swelling of the right lower limb The patient was obviously beyond the aid of surgery, and he died at the age of 19 A microscopic section of the tumour is not available.

CASE 2 —A brother of the first patient, at the age of 38, was seen complaining of swelling of the left testicle In July, 1933, he noticed that it was increasing in size, and there was a dull pain in it The swelling became much larger during the subsequent months There was no history of venereal disease, the Wassermann and Sigma reactions were negative The patient looked well, and nothing abnormal could be discovered in inguinal regions or abdomen The skin was reddened on the anterior aspect of the scrotum and the left *side of the scrotum was enlarged* The right testis was normal, but the left was enlarged, hard, and irregular in surface Testicular sensation was much diminished but not absent, the spermatic cord appeared normal, but there was a small hydrocele of the tunica vaginalis, which yielded blood on paracentesis A left orchidectomy was performed on May 2nd, 1934, the spermatic cord was excised as far as the internal abdominal ring Deep X ray therapy was given to the lumbar lymphatic glands, and the patient made an uninterrupted recovery, being well at the time of writing Prof E H Kettle kindly examined sections taken from various parts of the tumour, and reports that they show the typical appearances of a seminoma of the testis, there is no evidence of any teratomatous elements

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[1] Tanner, C O Surg, Gyn, and Obst, 1922, xxxv, 565.
[2] Southam, A. H, and Linnell, E. A. Brit Jour Surg 1923, xi, 223

Champlin[3] has recorded similar tumours of the testicle in identical twins The right testis was affected in each case and both tumours were sarcomata Other neoplasms which are reported having occurred in twins are adenocarcinoma of the uterus, papilloma of the larynx, retinoblastoma, fibro adenoma of the breast, tumours of the cerebellum and cerebrum Discussing the hereditary factor in the genesis of tumours Piney[4] draws attention to these possibilities In the first place tumours might be inherited and the offspring born with neoplasms Secondly a tumour diathesis might be transmitted, a neoplasm manifesting itself later on in life Thirdly, there may be a hereditary reduced resistance to those forces which cause tumour formation The inheritance of tumours is seen in von Recklinghausen's disease which is often familial in its incidence and usually appears to be heritable The disease known as polyposis of the colon is well established in having a familial incidence, but is not proven to be hereditary It is very probable that polyposis of the colon will occur in all offspring of those afflicted with the disease

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ACUTE PERIVASCULAR MYELINOCLASIS

"ACUTE DISSEMINATED ENCEPHALOMYELITIS"

A REPORT OF TWO FURTHER CASES ASSOCIATED WITH EXANTHEMATA

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In a previous communication (Marsden and Hurst)[1] details have been given of 7 cases of acute perivascular myelinoclasis which occurred amongst 11 408 cases of small pox treated in the London County Council small pox hospitals between the beginning of 1926 and the end of the third quarter of 1931 An account of a case which occurred at Stoke-on Trent in April 1930 reference to the Willesden case (Troup and Hurst)[2] and a discussion on the ætiology of the condition and on its association with acute fevers and the exanthemata, together with a review of some of the literature, were included in this paper More recently Wyllie has given a summary of some of the salient features of this form of encephalomyelitis

Though happily a rare condition even following primary vaccination, which has preceded it in most of the recorded cases acute perivascular myelinoclasis has of late years been superimposed upon an attack of measles (as described by Greenfield),[3] with a frequency which cannot be disregarded, despite the enormous number of young children who pass through an attack of this disease without nervous involvement

Since October, 1931, 2440 cases of small pox have been treated in the small pox unit of the River Hospitals, and one further case of acute perivascular myelinoclasis has occurred Nervous symptoms commenced in this patient on Feb 16th 1934 and he died 48 hours later At this time in the midst of London's most recent biennial measles epidemic, other and separate units of the River Hospitals contained about 900 patients who were suffering mainly either from scarlet fever or measles On Feb 20th, two days after the death of the above patient, a child aged 5 years was admitted to one of these units with a fading measles rash and in the early stages of an attack of encephalitis About 30 hours later she also was dead of acute perivascular myelinoclasis

In my small experience of this condition (ten cases) I have noted, as features not without epidemiological interest, that cases tend to occur during the early months of the year, and that each appears to arise spontaneously, though more or less contemporaneously with others

CASE 1—An unvaccinated youth, aged 17 years, a van guard in the employ of a well known firm of carriers, was known to have been in contact with small pox. Symptoms of onset of the disease, pains in head and limbs, and vomiting were noticed on Feb 6th, 1934, and on the two subsequent days On Feb 9th the focal rash appeared *and on the 14th the patient was admitted to hospital* with a well marked pustular modified small pox rash (between 100 and 500 lesions on the face) Temperature 98·4° F, pulse rate 100, respirations 20

On the morning of Feb 16th (temp 101° F, pulse 112 resp 20) the patient complained of headache and appeared drowsy, but he took his meals In the evening it was noticed that the boy had difficulty in speaking, and urine had been retained all day At about 3 A M on the 17th he became unconscious (temp 101 6° F, pulse 120, resp 24) Twenty ounces of urine, which contained no abnormal constituents, was removed by catheter All limbs were flaccid with absent reflexes, pupils were equal, somewhat contracted, and reacted to light The patient became incontinent of fæces At 3 30 P M (temp 102·4° F, pulse 128, resp 24) 30 c cm perfectly clear fluid, which escaped readily by drops, was removed by lumbar puncture, and 20 c cm convalescent small pox serum injected intrathecally; 25 c cm. of this serum was also given intramuscularly The patient moved slightly at the insertion of the needle, the corneal reflex only was obtainable, nasal feeds were given At 10 30 P M the temperature was 103 8° F, the pulse rate 128, and the respirations 24—the commencement of terminal hyperpyrexia Fifteen ounces of urine, which contained some albumin was withdrawn

On the morning of Feb 18th the temperature was 105° F, at which level it remained until death (pulse 132 resp 60) The patient was in deep coma, breathing stertorously Twenty-one ounces of urine, containing some albumin, was removed by catheter and a further 20 c cm convalescent small pox serum given intramuscularly There had been no further action of the bowels At 2 15 P M cyanosis was marked and respiration stertorous and irregular, the respiratory passages were full of mucoid secretion, trismus was absent Lumbar puncture was repeated and blood-stained fluid (trauma) withdrawn At 3 15 P M the boy was in extremis deeply cyanosed, and at 3 30 P M death occurred by respiratory failure

At the post mortem examination on the following day no striking macroscopic changes were observed Sections prepared and reported on by Dr J L McCartney show in the region of the basal ganglia an infiltration with mononuclear cells which are most numerous around the blood vessels; in addition there are [illegible] as well as a few polymorphonuclear [illegible] Weigert Pal preparations [illegible] this neighbourhood show a very vascular infiltration and a slight amount of perivascular demyelination, which is also seen in the cortex Sections of the pons show slight areas of perivascular demyelination, and in the cord also small scattered areas of this condition are seen Evidence of early pneumonia is present at the base of the left lung

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[3] Champlin, H W : Jour Amer Med Assoc 1930 xcv 96

[4] Piney, A, in The Chances of Morbid Inheritance (edited by C P Blacker), London 1934

CASE 2—A girl, aged 5 years, was admitted to hospital on Feb 20th, 1934, with a history of having suffered from headache, backache, pains in limbs, and vomiting on Feb 17th A rash had been noticed on the same day She had not spoken since the evening of the 19th, but had lain "like a log", salivation and constipation had also been noticed

On admission to hospital (temp 100 4° F, pulse 128, resp 32) the patient presented a fading measles rash, she was semi-conscious but could be partly roused, and was salivating markedly; pupils were equal, dilated, and reacted to light, limbs were quite flaccid, but at times a spastic tremor of the arms was noticed, neck rigidity was absent, both plantar responses were extensor At 6 P M clear cerebro-spinal fluid was removed by lumbar puncture At 10 P M temp 102° F, pulse 128, resp 32

On Feb 21st the patient was unconscious but could be roused by painful stimulation (temp 102 4° F, pulse 172, resp 56) Limbs were flaccid, pupils equal and reacted to light, abdominal reflexes were absent, Babinski's sign remained positive At 3 30 P M homogeneously blood-stained fluid (trauma) was removed by lumbar puncture, 8 c cm whole blood from a convalescent measles patient was injected intramuscularly, and sodium salicylate and glucose given intravenously; trismus was marked At 8 30 P M the temperature was 105° F, the pulse-rate 180, and respirations 60 (terminal hyperpyrexia), the patient was in coma with dyspnœa and bubbling mucous râles, she was doubly incontinent Death occurred at 11 25 P M

Weigert-Pal preparations from this case reported on by Dr McCartney show striking areas of perivascular demyelination in cortex, white matter near the basal ganglia, and pons In the cervical, dorsal, and lumbar regions of the cord this condition is seen here and there

Dr E Weston Hurst has very kindly given his opinion of the histological appearances in these two cases He considers that in both of them the appearances are within the normal limits for the post-vaccinal type of encephalitis He adds that, as in all the measles cases which he has seen, the extra-adventitial infiltration is relatively slight in the second case And further that in Case 1 there is much fragmentation of microglial nuclei, a rather unusual number of polymorphs around some of the vessels, and unusually good preservation of nerve-cells and neuroglial nuclei closely adjacent to the affected vessels

SUMMARY

Two fatal cases of acute perivascular myelinoclasis, one associated with small-pox and the other with measles, are described Clinically these cases were of the fulminating encephalic type, and histological examination of the central nervous systems revealed the presence of the changes peculiar to this form of encephalomyelitis In the small-pox patient nervous symptoms commenced on the eighth day of the focal rash. their onset in the measles patient occurred when the erythema was beginning to fade—i e, towards the end of the first week of illness as dated from the commencement of catarrhal symptoms These "incubation" periods are in agreement with recorded experience on this point

For permission to publish details of these cases I am indebted to Dr A F. Cameron.

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DISSECTING ANEURYSM OF THE AORTA

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HOUSE PHYSICIAN, MANCHESTER ROYAL INFIRMARY

THE following cases both have atypical features

CASE 1.—The patient, a man aged 50, first complained of feeling ill on May 2nd, 1934 Whilst he was waiting for a bus he experienced a sudden severe pain in the anterior chest which gripped him like a "vice" The pain continued severe for two to three days Then he began to complain of pain in the lumbar region of the back On May 11th he had a third variety of pain situated in the upper abdominal region, below the original chest pain. This was described as being of the same "gripping" type On the same and succeeding days the stools were dark from contained blood He was admitted to Dr E B Leech's ward at the Manchester Royal Infirmary on May 12th He had a systolic blood pressure of 270 mm. Hg, but there were no gross changes in the heart and no murmurs His arteries (radial and brachial) were extensively degenerated Temp 99 2° F., pulse-rate 104 respirations 18 The patient progressed unfavourably, and on May 13th, after complaining of abdominal pain, lapsed into a semi-comatose state and died

At post-mortem the heart was found to be much enlarged with hypertrophy of the myocardium In the aortic arch an atheromatous plaque had ulcerated and permitted the formation of a dissecting aneurysm which extended from the arch down the aorta to the abdominal region Coronary arteries: atheroma Stomach. normal Superior mesenteric artery completely thrombosed. Small intestine· showed almost complete hæmorrhagic infarction, as did the ascending and transverse parts of the large intestine There were also present signs of right sided heart failure. The lungs showed hypostatic congestion

It appears that at the onset of this patient's illness there was ulceration of an atheromatous plaque with gradual distal dissection of the aneurysm This, two days later, reached his abdominal aorta—presumably giving rise to the lumbar pain After nine days the pressure of the outer compartment of the dissecting aneurysm on the superior mesenteric artery at its origin caused thrombosis, with resulting infarction of the intestines The patient lived 11 days after the onset of his illness It is unusual to find secondary thrombosis of the superior mesenteric artery It is suggested that the high systolic blood pressure and the sheath-like action of the dissecting portion were responsible for this in a mechanical fashion

CASE 2—Whilst a student at the Manchester Royal Infirmary I was fortunate enough to see a case of dissecting aneurysm of the aorta admitted to the accident room (May 1st, 1931) This patient, a man aged 66, also experienced a sudden onset of pain (the same evening that he was admitted) It had occurred at 8 30 P M and had persisted It was sharp and situated in the middle line of the back between the scapulæ The patient also had some precordial pain and pain on breathing He had previously suffered from "Bright's disease" and high blood pressure A venesection had been performed about 12 months previously. Temp 96 4° F., pulse 80-72-64, full and bounding He was sweating profusely and extremely restless sitting upright and moving his thorax backwards and forwards The pain was relieved by morphia gr ¼ injected intravenously and subsequently intramuscularly This case was considered to be one of coronary thrombosis The patient died the next day

Post mortem the heart showed uniform enlargement and hypertrophy of the myocardium There was pronounced atheroma throughout the aorta; a plaque 1½ in. above the diaphragm had broken and through this the blood was forced along the thoracic aorta as far as the heart Mediastinum· infiltrated with blood Left pleural e extensive hæmorrhage (300 c cm) Kidneys typical terio-sclerotic lesions Right adrenal large adenoma ith hæmorrhage into it

The path of this dissection was retrograde towards he heart Its origin 1½ in above the diaphragm and s progress up the thoracic aorta account for the vere pain between the scapula There was a much ore rapid termination—possibly due to the infiltra-on of mediastinum and pleural cavity

Both cases resembled clinically coronary thrombosis, except for, in the first case a high blood pressure and lumbar pain, and in the second case severe dorsal thoracic pain

I am indebted to Dr Leech of the Manchester Royal Infirmary, to Dr W Susman of the pathological department, and to Dr Walker of Stretford, Manchester, for permission to publish these cases

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF PATHOLOGY

A MEETING of this section was held on Oct 16th, hen Dr **PAUL FILDES**, F R S , gave his presidential ddress on

Medical Bacterial Chemistry

Dr Fildes pointed out that the use of the term 'medical bacterial chemistry " implied a desire to xploit bacterial chemistry in the service of medicine Up till recent years biochemists who wished to enter he field of bacterial chemistry naturally selected hose bacteria for study whose metabolism could be educed to simple processes and these were bacteria f economic but of no medical importance The netabolism of the medical microbe was too complex o analyse in terms of chemistry Tentative efforts n this direction failed and were abandoned More ecent advances in biochemical knowledge had owever, reopened interest even in medical bacterial hemistry Dr Fildes thought that interest might have been reopened sooner were it not for the absorp ion of most medical bacteriologists in pure medicine and the resulting difficulty in arranging satisfactory ollaboration between them and biochemists He proposed to confine his further remarks to the subject of bacterial nutrition, but he indicated that a worker in this field might readily find himself involved in other problems The nutrients of a pathogenic bacterium were the tissues of the host Results obtained by test tube experiments had already been applied to disease (Argyll Campbell and Fildes) Toxins also were instruments of disease and products of bacterial metabolism Further he envisaged the possibility that substances found to be essential for bacterial nutrition might subsequently be found essential for animals Carotene, for instance, played a part in the metabolism of some bacteria

A worker studying bacterial nutrition soon found difficulty in the fact that the nutrition of a single species was not constant Dr Fildes outlined the materials and mechanisms involved in bacterial nutrition, and stressed the fact that katabolic enzymes were required to break down substrates with the liberation of energy and anabolic enzymes to synthesise bacterial protoplasm with the absorption of energy The former were non specific in the sense that energy was the final product but the latter were specific in the sense that the final product—protoplasm—differed to some extent in all species It had been shown by Dr Marjory Stephenson at Cambridge and by others that the enzymes of a bacterium might be changed merely by altering the substrate They were produced by the bacterium as the result of the stimulus of an abnormal substrate If an alteration in the katabolic enzymes was induced, *the nutrition of the microbe was not affected* Energy was produced as before But if an alteration was induced in the anabolic enzymes by an alteration in the appropriate substrate the resulting bacterium was not precisely the same as it was before The typhoid bacillus could, for instance, be converted into an organism which a bacteriologist would not class as such merely by altering the substrate in which it lived In particular, a normal typhoid bacillus must be supplied with tryptophane to grow because it had tryptophane in its proteins and could not synthesise it But it could be trained to synthesise tryptophane from ammonia—i e to produce enzymes in response to the stimulus of ammonia in its substrate which could synthesise tryptophane from ammonia

If these two types of typhoid bacillus were disseminated at large the bacteriologist might recover the "new" ones from water, but not the "old" ones, because there is no tryptophane in water The "old" ones would be recovered only from organic matter containing tryptophane The distribution in space of these two varieties would be governed by the substrate Dr Fildes thought that the development of "ammonia enzymes was to be looked upon as an atavistic reversion—such strains were older in an evolutionary sense than the tryptophane strains He proceeded to picture the origin of life in such a cell as the autotrophic bacterium He argued that the type of life was governed by the type of substrate and that earth before life was a purely inorganic substrate upon which autotrophic bacteria, but no other known form of life could have lived These bacteria lived in a similar substrate to this day The evolution of autotrophic bacteria could have been the first instance of the synthesis of organic matter and when this took place a new organic substrate would be provided which would induce small alterations in the individuals and so gradually with substrates of increasing organic complexity, small alterations in the species Dr Fildes declined to enlarge upon the implications of this suggestion Reverting to the account of his typhoid bacillus which was associated in space with tryptophane containing organic matter, he noted that animals were an important source of tryptophane, and thus this typhoid bacillus would tend to become associated with animals as parasites The character of parasitism in a bacterium was associated with a particular order of nutrition in which complex materials were taken preformed from the substrate Thus when the microbe is in the tissues it must take these complex materials from the tissues perhaps to the detriment of the cells of the tissues and to the [illegible] of their anti mechanisms The disease produced by a bacterium in the tissues might thus be in part a deficiency disease

REVIEWS AND NOTICES OF BOOKS

Manometric Methods as Applied to the Measurement of Cell Respiration and Other Processes

By MALCOLM DIXON, M.A., Ph.D., Sc.D., Rockefeller Lecturer in Biochemistry in the University of Cambridge. With a foreword by Sir F. G. HOPKINS, President of the Royal Society. Cambridge: University Press. 1934. Pp. 122. 5*s*

FROM the study of the chemical behaviour of the whole animal, and from the description of the chemical reactions which can be performed by isolated and perfused organs, biological chemists have in recent years extended their research to an examination of the chemical life-processes of the cell itself. It is as yet hardly possible to work with individual cells, and it is the average effect of a number of cells which is determined. It is largely by the use of manometric methods that workers have been able to make their determinations with a relatively small number of cells at a time. Manometric methods as applied to tissue metabolism are sufficiently sensitive to enable accurate measurements to be made with a milligramme of yeast or bacteria, or with a few milligrammes of sliced animal tissue. By making it possible to measure the rate at which the cells carry out their chemical reactions these methods also make possible the application of the experimental method. By modifying the metabolism of the cell by artificial means, much is being learnt about the cell's behaviour which would not otherwise be easily discovered. It is only recently that much attention has been paid to the development of sensitive manometric methods, and it must be confessed that the existing apparatus is crude and that the methods, though often ingenious, are not very far developed. Even then the use of the apparatus and of the technique for measurements with surviving tissue demands skill and a considerable amount of experience. It is not to be approached lightly. Dr. Dixon's book, however, makes the approach very much easier; it is the first general account, by an author with considerable experience, of the theory and practice of manometric methods as applied to the study of tissue metabolism. Some of his injunctions may err on the side of over-precaution, but the attention to detail and the original thinking that has gone to the making of this book are remarkable. The theory of the Barcroft manometer is given in full for the first time in the 26 years since this much-used apparatus was designed. A hitherto-unpublished constant-pressure manometer of the author's own design is described. Warburg's rather complicated method of allowing for the CO_2-retention of serum in manometric measurements is presented in easily understandable form.

Dr. Dixon summarises clearly the relative advantages and disadvantages of the possible types of apparatus to be used for a given purpose. His recommendations will be of the greatest help to those who propose to buy manometric apparatus but are puzzled as to which types to choose. When giving the conventional symbols used to denote the magnitude of the metabolism, Dr. Dixon makes the excellent suggestion of $Q_G^{O_2}$ and $Q_G^{N_2}$ for aerobic and anaerobic glycolysis respectively, since these, unlike the symbols generally used, are not limited to one language.

Sensitive manometric methods are applicable of course to wider studies than those of cell metabolism. They are being appreciated more and more in pure and applied chemistry. On the other hand, in the study of cell metabolism itself, they will not necessarily remain the best methods. It is difficult to see, for example, how it can ever be possible to record continuously oxygen consumption and acid-production in bicarbonate-containing media by manometric means. Some physical property other than pressure will have to be invoked. But at the moment manometric methods hold the greatest promise in this field, and Dr. Dixon's book is the epitome of their present development.

Le sérum normal

Récolte et caractères physiques. By DENIS BROCQ-ROUSSEU, Membre de l'Académie de Médecine, and GASTON ROUSSEL, Ancien Président de l'Académie Vétérinaire de France. Paris: Masson et Cie. 1934. Pp. 363. Fr.75.

THIS is the first volume of a series of three, the other two being concerned respectively with the physiological and chemical properties of normal serum. Here the authors have discussed with great thoroughness the available information on the various physical constants of serum such as density, osmotic pressure, electrical conductivity, surface tension, viscosity, refractive index, dielectric constant. The book is not one for reading through at a sitting, for few are interested in more than one or two of these details at a time, but as a work of reference it should be of great value.

It may however be questioned whether the scope of the work has not been made too wide for its size. For example the section on pathological variations in serum pH is so brief as to be misleading; moreover it is principally concerned with cancer and diabetes is not mentioned. Similarly, the remarks upon surface tension in malignant disease suggest that the observation made is of real clinical interest which it is not. Valuable chapters are included on the collection and preservation of serum from various different species of animals and upon certain rarely considered properties of serum, such as odour. An excellent bibliography contains 1321 references.

Diathermy in General Practice

Second edition. By ERIC PAYTEN DARK, M.C., M.B., Ch.M. Syd., late Radiographer, Royal Prince Alfred Hospital, Sydney; Demonstrator of Anatomy, University of Sydney. With a chapter on Diathermy in Gynæcology, with special reference to Major Surgery, by F. A. MAGUIRE, C.M.G., D.S.O., M.D., Ch.M. Syd., F.R.C.S. Eng., F.R.A.C.S., Hon. Gynæcologist, St. Vincent's Hospital, Sydney. Also a chapter on Diathermy in the Treatment of Mental Disorders, by GUY U. P. PRIOR, L.R.C.P. Lond., M.R.C.S. Eng., Superintendent, Mental Hospital, Paramatta, N.S.W. Sydney: Angus and Robertson Ltd. 1934. Pp. 219. 17*s* 6*d*.

AFTER giving a brief account of the history diathermy, the principles on which it is produced, the methods of administering it by way of electrodes in contact with the skin, and its physiological properties, Dr. Dark has written on the therapeutic effects of diathermy in fibrositis, injuries, neuritis, rheumatic and inflammatory conditions, and high od pressure Notes are given of 83 cases In a pter on pneumonia he describes the methods l results of Dr H E Stewart of New Haven, S.A. In regard to the treatment of gonococcal ection he himself has had little experience, but he written an account of the work of the original estigators in London, Chicago, and Colorado rings A short outline of surgical diathermy is en, and the chapter dealing with the surgical atment of the chronically infected tonsil by this ans is of special interest, Dr Dark has practised s form of treatment for six years without being a nd adherent to it, and he states its limitations and advantages as well as those of treatment by ucleation The future of diathermy is viewed in the ncluding chapter

The book provides a good picture of the therapeutic ld of diathermy, chiefly in its non-surgical aspects Dark writes largely from his own experience the treatment of common complaints in ambulatory tients, and the information which he gives will be lpful to practitioners, especially those working in e "one-man towns" of Australia or in districts ere the service of trained auxiliaries is not obtain- le A series of plates show the positions of the ectrodes during treatment of the joints and the est The style of writing is attractive and colloquial

Mr Maguire describes some strikingly good results ich he obtained by using surgical diathermy in the eatment of malignant disease of the urethra vagina, d cervix, but apart from the very brief account the treatment of cervicitis there is nothing on the n-surgical uses of diathermy in gynæcology Dr ior's account of results of treatment of 24 cases of neral paralysis of the insane is brief and concise e employs the method of Neymann and Osborne o has treated 21 cases of other forms of mental sease, either by the same method or by cerebral athermy The treatment was apparently given for e purpose of investigation, and Dr Prior remarks at the results "if not universally good are of such nature as to render this treatment well worth further udy" The book will be a useful addition to the brary of those who are interested in physical medicine is clearly printed in large type and it is very light r its size

iseases of the Skin

A Handbook of Dermatology for Practitioners and Students By S ERNEST DORE, M.A, M D Camb, F R C P Lond, Consulting Physician, St Thomas's and Westminster Hospitals, and JOHN L FRANKLIN, M.A, M D Camb, M R C P Lond, Assistant Physician Diseases of the Skin Westminster Hospital London Cassell and Co, Ltd 1934 Pp 410 and 46 half tone plates 10s 6d

THE modern student of dermatology is more ortunate in some respects than his predecessors, or although the scope of the subject has been roadened, nomenclature has been simplified and tiology accorded an increasingly important and cientific position in the nosology The clinical nowledge set out in the older text books however, annot safely be disregarded, and Dr Dore and r Franklin have done well to rescue from threatened blivion a text book which in its day passed through even editions, and to bring it up to date

The work has been well done, and would have arned the commendation of its illustrious progenitor, he late Sir Malcolm Morris The table of contents as been radically revised It is to be regretted that there is no standard and accepted method of classification in dermatology Some adhere to the older method based on morphology of the lesions, others attempt to classify according to the ætiology, so far as this is known, and others again prefer a mixed table, so that unless the reader has considerable knowledge of the subject he will be liable to confusion at the very outset Why, for instance, in this book should a chapter on the neurodermatoses and prurigo follow immediately on Chapters 1 and 2 which deal with the anatomy, physiology, and principles of diagnosis? Another author follows his introductory chapters with sections dealing with parasitic diseases, and a third with the congenital affections of the skin The last arrangement is that which was followed by most of the classical writers from Hebra onwards, and in the present state of our knowledge would appear to be the most rational

The authors say that so much fresh matter had to be introduced that the book had become virtually a new one Much of the original text, however, seems to have been preserved in this volume, it is a comment on our present lack of knowledge to note how little alteration was needed in the excellent chapter on leprosy The illustrations are not quite up to the modern standard, but are fully typical of the diseases they portray

La tuberculose pulmonaire

Et les maladies de l'appareil respiratoire de l'enfant et de l'adolescent By P-F ARMAND-DELILLE and CH LESTOCQUOY With the collaboration of R HUGUENIN Introduction by Prof CALMETTE Paris Amédée Legrand 1934 Pp 512 With 541 figures Fr 350

THIS sumptuous volume is a pictorial record of pulmonary tuberculosis and respiratory disease as it affects the infant and the adolescent The method of investigation has been threefold, radiological, bacteriological, and anatomical The authors point out that in order to establish completely the diagnosis of a chest disease four conditions must be satisfied (1) a study of the ætiological factors, especially with regard to the possibility of family infection, (2) what they describe as the biological reaction—viz, the cutaneous reaction of Pirquet or the intradermal reaction of Mantoux, (3) the radiogram and its accessory, the radioscopic examination; and (4) the search for Koch's bacillus, in which connexion great emphasis is laid on the method of gastric lavage

This, in brief, is the method of approach The details are worked out in an elaborate series of very beautiful radiograms, often with lipiodol pictures to bring out important details. These radiograms are in many cases controlled by photographs of the lung specimen as removed at autopsy, together with line drawings (many of them coloured) to indicate special points and microphotographs of histological sections. Some of the radiograms are of full size and exemplify practically every type of tuberculosis There are in all no less than 541 figures of which 164 are radiograms 233 diagrams and line drawings in black or in colour, and 144 histological sections In view of this generosity on the part of the publishers the price appears to be extremely reasonable The collection and representation of typical specimens must have involved a vast amount of labour and their technical reproduction leaves nothing to be desired. We know of no comparable work of this scope It has no complete bibliography but a few references in footnotes and a satisfactory index

Handbuch der Chemotherapie

Vol. II. By Dr. VIKTOR FISCHL, Auswärtiger Wissenschaftlicher Mitarbeiter der Schering-Kahlbaum A G, Berlin; and Prof. Dr. HANS SCHLOSSBERGER, Mitglied des Reichsgesundheitsamtes, Berlin-Dahlem. Leipzig Fischers Medizinische Buchhandlung. 1934. Pp 359–898. M 55.

As a catalogue of organic therapeutic compounds this handbook is supreme, and it is enough to add that the work is done with the accuracy and precision which we are in the habit of associating with the best German publications. The second volume, like the first, will take its place in the library of any department of experimental pharmacology or chemotherapy

MEDICINE AND THE LAW

Proof of Age

How does a man know his own age? Will a court of law accept his own statement on the point? The answer to these questions would appear simple, but the law has a habit of insisting on the best possible evidence and of rejecting anything like hearsay. At Westminster county court last week two young women, sued for a debt of £19, pleaded infancy and produced their birth certificates to show that they were under age at the time of the transaction The plaintiff's counsel objected that a person cannot give evidence of his or her own age The father of one of the defendants was then called into the box and stated the age of his daughter "I don't suppose," said cross-examining counsel, "that you were present in the particular place where your daughter was born?" "No," replied the witness, "but I was in an adjacent room and information of the birth of a daughter was given to me" He identified the baby as the defendant in the case The judge thought the evidence sufficient but was willing, if required, to have the defendants' mothers brought to court at the plaintiff's expense to supplement and confirm it. In the judge's view any individual is a competent witness as to his own age, and more particularly when he backs his evidence with a birth certificate. The point being novel, he was willing to grant leave to appeal if application was lodged in 21 days

The text-books usually explain that a birth certificate is not evidence unless the entry purports to have been signed by a person professing and qualified to be the informant or unless it was signed in the special conditions for registering births at sea A certificate, though in all other respects regular, is useless in evidence unless identified with the particular person whose birth it records In the Westminster case last week the ordinary layman would have little doubt that identification was complete.

Claims against Deceased Doctors' Estates

Under the title of "A Mare's Nest" the *Law Journal* recently referred to a paragraph in a London evening newspaper headed "Doctors' Danger." If the latter caused any practitioner's heart to beat the faster, our learned contemporary's comments will perhaps provide a sedative. According to the newspaper paragraph the medical profession was alarmed at the new danger to which doctors were to be exposed by the operation of the Law Reform (Miscellaneous Provisions) Act in the present month of October This mention of a date was somewhat puzzling at the outset because the Act came into effect last July the risk has consequently been running for tw months already, though possibly regarded as during the lawyers' long vacation The substanti cause for alarm, it seems, was that doctors future be attacked on a much wider front by plaint seeking damages for professional negligence where th doctor's patient has died. Then came a remarkab instance "A hypothetical case quoted to me by legal authority to-day," said the paragraph, "shows how a disappointed legatee might attempt to get th value of a missing legacy from the pocket of th testator's doctor." This instance was based on th threefold assumption that the patient bequeath to the hypothetical plaintiff a legacy, that the patie died from his doctor's negligence, and that, if th patient had only been kept alive, the estate wou certainly have become solvent How this last conditi could have been proved by the plaintiff, and how h could overcome the legal difficulties arising from t remoteness of the supposed damages, the paragra did not explain. In fact, as the *Law Journal* hinte this attempt to create alarm and despondency in t ranks of medical practitioners was perhaps the w of a not very seriously minded person.

The main object of the Act, set forth in its f section, was to get round the curious maxim of th English law, actio personalis moritur cum persona a personal action dies with the person A sim example was given by the Law Revision Committe which reported to the Lord Chancellor last Marc If a negligent driver of a vehicle was killed in collision caused by his negligence, the rights wh persons seriously injured would have had aga the negligent driver, if he had not been killed, we extinguished by his death It followed that t liability of the insurance company under the th party-risks policy came to an end, and neither t sufferers, if alive, nor their dependants, if the victi were dead, could have any redress The committ was impressed by the injustice of this position, regarded a remedy as the more urgently need because the number of traffic casualties has so grea increased The new Act gives the remedy, a inevitably a claim against the estate of a negli surgeon who has died becomes possible in the sa manner as a claim against the estate of a neglig motorist who has died The medical profession co hardly have succeeded in obtaining for itself statutory exception for its own species of professio negligence The new law has, for reasons of le history and doctrine, complications too technical f a brief summary to expound It is not confined giving a remedy where the potential defendant h died; it also improves the position of the depend where the potential plaintiff has died, though contains provisions intended to keep down th amount of the damages to be awarded With going further into the details of the statute, we m here note that, in the case of rights of action wh will in future survive against the estate of a decea person whose negligence is the basis of the plainti claim, the claim will not be entertained unless (*a*) legal action had already been begun before his dea or (*b*) the cause of action arose not earlier than months before his death and the proceedings begun not later than six months after his perso representative took out representation. This per of limitation, so far as it goes, will do someth to restrict the liability of practitioners who naturally at a disadvantage when acts or omissi in the course of a busy professional life are chall long after the case is forgotten.

THE LANCET

LONDON. SATURDAY, OCTOBER 20, 1934

WHOOPING-COUGH THE PROMISE OF RECENT WORK

It was characteristic of much of the earlier work on vaccines in whooping-cough that where one observer had at least moderate success another had little or none Although there was relatively greater agreement about their prophylactic value, vaccines in treatment seemed no more reliable than the hundred and one drugs which from time to time have been recommended as specific Indeed it has been questioned whether the *Bacillus pertussis* of Bordet and Gengou is, after all, the causal organism of the disease, may it not be merely concomitant, a filtrable virus being really accountable? The belief that the Bordet-Gengou bacillus is the true and sole cause has received incontestable support, however, from a critical human experiment[1] From the work of the Macdonalds it is concluded that the disease is caused by the Bordet Gengou bacillus exclusively, and that active immunisation is produced by vaccines prepared from it The cough plate method referred to (which was fully described by A D Gardner and P H Leslie in our first issue for 1932) consists in the exposure and subsequent incubation of a defibrinated, preferably human, blood-agar plate a few inches from the child's mouth when it is in the act of coughing Its reliability has been favourably reported upon by many workers P Kendrick and G Eldering[2] were able by its use to recover the *B pertussis* in from 78 to 84 per cent of 207 clinically diagnosed cases in the first three weeks of the disease, the percentage falling to 39 in the fourth week and to zero in the sixth week Since in its early stages the disease is not only most infective but most difficult (if not impossible) to diagnose on clinical grounds the importance of this method is obvious Clearly, too, it would be of great assistance in control of the disease if a test of susceptibility, analogous to the Schick test, were available With this in mind S K Siebler and S Okrent[3] injected intradermally 1 to 2 minims of a suspension of fresh organisms in physiological saline with 0 5 per cent phenol, using the phenol saline alone as a control Production of an area of redness, 1 cm wide or more, best observed at 72 hours, was regarded as evidence of susceptibility Positive tests in the acute phase of an attack became negative in the fifth week after onset, and after vaccine prophylaxis 20 out of 25 children gave negative tests four months later The latter result incidentally supports Sauer's opinion[4] that three or four months should be allowed to elapse between inoculation and exposure in order that immunity may have time to develop

Whooping cough is the most serious of the acute specific infections of childhood, not excepting measles, and it is important that this work should be repeated upon a larger scale Great care is now taken in preparing pertussis vaccines to ensure that the organism is actually *B pertussis* unmixed with other strains of the same hæmophilic group, that fresh cultures in the correct antigenic phase are used, and that the dosage is adequate Some vaccines contain organisms with their endotoxin intact, others are detoxicated K Kundraditz,[5] in a contribution the more valuable because of its caution, recounts his experiences with a vaccine prepared by the Vienna Institute of Serotherapy Five injections were made at intervals of one to two days, the first three consisted of 3, 4, and 6, and the fourth and fifth of 8 thousand million organisms Reactions, often troublesome with the older vaccines, were confined to slight local redness or occasionally transient pyrexia In one group 16 children of different families were exposed to definite infection at home Contact was intimate and prolonged, no isolation of the declared cases was attempted Amongst the exposed children were some who when inoculated had no cough at all in others the cough was very slight and not characteristic Inoculations might thus be regarded either as prophylactic or as attempts at early therapy None of the 16 children developed typical whooping-cough, four remained entirely free, eight developed slight atypical coughs, whilst the remaining four had for one or two weeks sporadic attacks sufficiently typical to make a diagnosis just possible In another group of children with definite whooping cough inoculation produced notable amelioration in 11 out of 18 who were in the early paroxysmal stage Kundraditz observes that in the early stages it is only the activities of the *B pertussis* which have to be checked by specific therapy, whereas later secondary infections and possibly gross pathological changes come into play J M Frawley[6] points out that bacterial antigens are altered by physical agents such as heat or chemicals and thus lose their relationship in whole or in part to the organism from which they originated Accordingly for the past two years he has made prophylactic injections of a vaccine prepared by disrupting mechanically living virulent phase I organisms, which were described by GARDNER and LESLIE as the strain of high antigenic activity After disruption, the resultant suspension is subjected to filtration through collodion membranes. All intact cells are retained; material in molecular or colloidal solution passes through and this filtrate contains the antigen FRAWLEY claims that no reaction follows its use because the bulk of bacterial protein has been removed and the toxic filtrate has been eliminated by thorough washing Further, since human and not animal blood is used to enrich the medium there is no danger of sensitisation by adsorbed foreign protein Preliminary trials of small doses were encouraging, larger doses have produced better results Thus 505 non-immune school-children received once weekly four injections of 2 c cm of the antigen Subsequently 80 were intimately exposed to whooping-cough In 49 no symptoms developed; 31 did develop very mild attacks The controls were 174 uninoculated children with whooping-cough seen during the same period. Whereas in the inoculated group in only one child of the 31 did the paroxysmal stage last two weeks or more, amongst the controls there were 116 such attacks No reactions followed the injection of non-immunes; on the other hand, considerable reactions, probably allergic, resulted from the injection of recently recovered children FRAWLEY suggests that the routine inoculation of kindergarten children would remove the dangers of epidemics because such children are often allowed to attend school during the highly infectious catarrhal stage

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[1] H and F J Macdonald (Jour Infect Dis, 1933, liii, 328) obtained the services of four healthy boys None had previously had whooping-cough but two had been inoculated with vaccines prepared by the method advocated by L Sauer. All four were segregated together Into the nose and throat of each was first instilled a culture filtrate prepared from the *B pertussis* Observations over a sufficient period to allow of possible incubation were quite negative Next was instilled, similarly, a suspension prepared from a second generation of the same organisms The two inoculated volunteers remained free from symptoms during the entire period of observation cough plates (vide infra) were repeatedly negative On the other hand, the two boys who had not been inoculated both developed typical severe attacks of whooping-cough Cough plates were strongly positive in the catarrhal and pre paroxysmal stages but became and remained negative when the typical paroxysmal stage began Confirmatory findings were a high leucocytosis and positive complement fixation tests

[2] Amer Jour Pub Health 1934, xxiv, 309

[3] Jour of Pediat 1934 [illegible]

[4] Jour Amer Med Assoc, [illegible] 1862

[5] Med Klin, August [illegible] 1934 [illegible]

[6] Jour Amer Med Assoc [illegible] 1934, [illegible]

It is clear that recent work abroad on the specific control of whooping-cough shows great promise It is true that it owes much to English workers such as GARDNER and LESLIE and, given the chance, English workers are ready and willing to repeat and extend it But how is it possible for immunologists in this country to assess at first hand new advances in the control of this or any other infection unless opportunities are provided freely and fully in the interests of the public health?

NATIONAL RADIUM

DESPITE the threat of the Curie-Joliots and the Fermis to produce radio-activity out of the common elements, the Radium Trust continues unperturbed to safeguard the national supply of radium and the Radium Commission to apply this radium to medical needs[1] The total amount of radium now placed at the disposal of the Commission by the Trust is about 20 grammes, and its sterling value remains unchanged Although so large it is only a fraction of the total quantity of radium available for treatment in the country which is now about 70 grammes Custody of this precious element is a great responsibility During the past year the Commission has paid out £550 in insurance, claims, and repair charges precautions are however proving more and more effective and only two containers with about 7 mg of radium were lost, the cost being covered by the underwriters Only a small amount of element, about 175 mg in all, has been purchased during the year, mainly to honour the undertaking to supply the immediate needs of the centres, many of which required new containers owing to changes and improvements in technique. All this radium is of Belgian origin, except a small quantity of Cornish origin lent by the Trust to the National Physical Laboratory for an investigation into the possibility of measuring gamma ray dosage in terms of the rontgen (r).

The policy of the Commission in the disposal of this radium was defined four years ago and is being maintained In order to avoid wastage of radium-time and ensure efficient use of staff and service, the Commission laid down the principle that patients should be brought for treatment to centres which possessed fully equipped clinics and specialist staff rather than that the radium should be taken to the patients There are now 13 national radium centres scattered at convenient spots over England, Wales and Scotland with a view of serving the whole country, but owing to their geographical distribution it was found necessary to relax to the extent of setting up five regional centres at outlying spots—viz, Lincoln Norwich, Plymouth, Southampton, Stoke-on-Trent So satisfied has the Commission become of the wisdom of this concentration that during the past year it has withdrawn its supplies of radium from three of the centres where the conditions were not being observed At one of these the Commission was unable to find the spirit of cooperation and progress exhibited by the majority of centres, at another the building allotted for radium institute had not been adapted for its purpose, nor had the promised radon installation come to fruition, at a third no full-time officer had been appointed In regard to these matters the report is as frank as anyone could desire other centres the cooperation and concentration are commended and a word of recognition is given to one at the appointment of the radium officer as research lecturer so that he comes into contact with students in their final year, to another at the fact that the radon laboratory is functioning exactly in the manner outlined by the Commission to another that the follow-up work is so complete that practically all patients have been traced to another at the experience with a small ma unit which justifies the allocation of a larger un of one gramme Taking the centres as a whole however, the Commission is still anxious that there are so few signs of expanding bed accommodation It is essential for the success of the scheme that each centre should provide for the needs of a population larger—it may be much larger than that normally served by the hospitals vhich they have been established Provision f more beds is a crying need at this stage In everal centres the tendency to combine treatment y X rays with that by radium is acting as a urther incentive to concentration One centre s in the process of installing a deep X ray therapy lant which will be capable of running six tubes imultaneously, and at other centres deep X ray reatment is now available or will be shortly At nother centre a new type of X ray tube has been nstalled of such a design that should the filament burn out the tube can be dismounted, a new filament introduced, and the tube put into action in a few hours This initiative is highly commended

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[1] Fifth Annual Report of the National Radium Trust and Radium Commission, 1933–34 H M Stationery Office Cmd. 4711. 9d

Although at the moment the amount of radium is regarded as sufficient, the Commission foresees that an increased demand may arise in two ways In the first place there is a growing recognition that for cancer in many sites radium treatment is he treatment of choice, if only as a palliative, nd in the second place there is an increasing lemand for quantities of radium large enough or use outside the body, several inches away rom the skin There are now three units of ne gramme each allotted by King Edward's Fund to the Cancer, Middlesex, and University College Hospitals, all these units have been in ontinuous use since August, 1932, and during he year 1933–34 a total of 231 cases were so reated under identical conditions as regards iltration, skin distance, shape and size of beam, o that the results can be compared There is n fact an interim report in prospect this year n which the investigators will attempt to differentiate methods on a broad basis, and with the help of comparable data obtained by surgical methods These one gramme units are quite ndependent of the research on beam therapy which is being carried out at the Radium Institute nder the joint supervision of the Medical Research Council and the Department of Scientific and ndustrial Research The Radium Trust is watching with interest the results of this research to see what bearing it will have on the provision of radium treatment on a national scale

INFLUENZA VIRUS A FURTHER ADVANCE

LITTLE more than a year ago a great advance as made in our knowledge of the causation of nfluenza, as the outcome of the work of SMITH, NDREWES, and LAIDLAW[1] They found that nfluenza could be transmitted to the ferret and, rofiting by this discovery, demonstrated conusively that the prime cause of this disease elonged to the group of filtrable viruses We re now indebted to the same group of workers r a further advance in this field of research n a communication by ANDREWES, LAIDLAW and ILSON SMITH, which appears on another page this issue, evidence is produced to show that, uitably inoculated, the mouse can be infected ith the virus of influenza Their first experiments were made with a strain of Shope's swine influenza virus which, it will be recalled, they had previously found to be either identical with or a very close relative of the human virus Using a strain of virus which had been passed 12 times through ferrets, six mice were inoculated directly into the lungs through the chest wall The mice remained to all appearances well, but when they were killed five days later one was found to have developed an area of consolidation in the right lung A suspension of this organ administered intranasally to a ferret produced typical ferret influenza, and when it was injected into the lung in six more mice resulted again in one mouse developing an area of pneumonic consolidation In subsequent passages mice were inoculated intranasally, under light ether anæsthesia This was found to be a superior method to that of direct inoculation into the lung, a higher proportion of mice being infected, in this manner the virus was passed serially through mice 16 times without difficulty It is noteworthy that the swine influenza infection in mice is like that in the ferret and unlike that in the pig, the virus alone produces a severe and perhaps fatal disease, no concomitant bacteria being necessary

On repeating these experiments with a ferret strain of human influenza virus much the same results were obtained and 11 serial passages were achieved Most of the mice were killed about the fourth or fifth day for the purpose of passage, but these strains of virus adapted to the mouse produced definite signs of illness and if the infection was allowed to take its course it commonly had a fatal termination Since methods of rigid quarantine were not employed in these experiments the observers considered the possibility that the mice inoculated with the human strain of influenza virus might unwittingly have been infected with the swine influenza strain, and that only this latter virus might be capable of infecting mice The venue of the experiments was therefore changed from the farm laboratories of the National Institute for Medical Research at Mill Hill to their laboratories at Hampstead and using another ferret strain of human virus, the work was repeated Similar results were obtained clearly indicating that the mouse is susceptible to both swine and human influenza virus administered by the respiratory route When it is added that cultural and filtration experiments left no doubt that the disease in the mouse was due to a filtrable virus and that hyperimmune sera prepared against the ferret strains of human and swine influenza virus neutralised the corresponding mouse strains it will be seen that the story is complete It is true that there is detail to fill in, but the outline is drawn with unfaltering strokes

The importance of these findings needs no emphasis To have available for influenza work an inexpensive and easily handled animal like the mouse is an enormous advantage It has yet to be shown that the mouse can be infected direct from man but ANDREWES, LAIDLAW, and WILSON SMITH do not think this should prove impossible, provided that the inoculum is given by the respiratory route and a sufficient number of animals are used. Should this be achieved the study of the virus of influenza will have been brought within the scope of even the most modestly equipped laboratory, and investigation of influenza will have been given an immense fillip Meanwhile it is noteworthy that both viruses were neutralised by specific antisera, the serum used for the human (W S) virus being from a horse hyper-immunised with tissue from ferrets infected with the same strain. Five mice receiving mixtures of virus and undiluted serum survived, though they were afterwards proved to be susceptible, while five controls all died with typical lesions six or seven days after infection

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[1] THE LANCET 1933 ii. 66

ENCEPHALITIS IN ST. LOUIS

A YEAR has now passed since encephalitis swept over the city and county of St Louis, Missouri, with an incidence of about 1 in 1000 of the population and a case-fatality rate of 20 per cent While much has been written about this epidemic in the American medical press (quotations from which have from time to time appeared in our columns[1]) no comprehensive account of it can be written until the pathological investigations are completed and the after-histories of the sufferers recorded A preliminary survey, however, may now be made, and at the annual session of the American Medical Association held at Cleveland last June eight papers were given each dealing with a particular aspect of the subject[2] In summarising the views expressed one can see how far they provide answers to the wide question which naturally arises first—Can this outbreak be definitely placed in the same class as any of the known previous epidemics of encephalitis? If so, which?

Dr. JOSEPHINE B NEAL in a general review gives the following groups as a tentative classification of the various known forms of acute encephalitis: (1) (*a*) epidemic (lethargic) encephalitis, (*b*) acute encephalomyelitis; (2) Australian X disease; (3) Japanese type B, (4) encephalitis following vaccination, (5) encephalitis following infections; and (6) the St. Louis epidemic The pathological investigations make it clear that ætiologically this last differs from all the others, for a virus has been obtained pathogenic for mice, and somewhat for rhesus monkeys, which is distinct from those previously known The experiments from which these important findings are obtained were carried out simultaneously at two separate laboratories. The grounds upon which the conclusion that this virus is the causal agent of the St Louis epidemic is based are the number of strains of similar characteristics isolated, and the neutralisation of the virus by serum of individuals convalescent from encephalitis in this epidemic, but not by the serum of individuals recovered from other diseases In mice, after intracerebral inoculation of brain tissue from dead patients, the incubation period was usually about five days, in monkeys, which are less susceptible, it was eight to fourteen days[3] Mice usually die if definite signs of illness develop; monkeys on the other hand, may recover The virus can be transmitted in mice by intracranial inoculation, in a dilution of 1 in 1,000,000 of the mouse brain; by the intranasal route a somewhat larger dose is necessary. Histologically the changes found in the nervous system of the animals are consistent wi those observed in the human disease. On the clinica side, it was pointed out from the first that in the St. Louis epidemic the focal stigmata so commo in lethargic encephalitis were uncommon; extre lethargy and acute delirium were unusual, was very rare On the whole the type of resembled the Japanese type B rather than Economo's disease. In view, however, of the wide variations in the clinical features of successi annual outbreaks of the latter, too much must not be laid on these differences. Mo important is the apparently high incidence meningeal symptoms, in which connexion puncture yielded valuable information cerebro-spinal fluid was clear under modera increased pressure; cell counts from 50 to 25 even exceptionally 500, chiefly mononuclear, found; neck stiffness and Kernig's sign common. In age-incidence and case-fatality, this epidemic was unlike Economo's disease St. Louis both incidence and fatality were strik increased with age—a finding in strong c to the heavy incidence of Economo's disease children and young people, and its c rarity after middle life Again, on the mo anatomical changes found in the nervous sy of the St Louis cases differences from Econo disease were observed, in that the showed more intense infiltration with mon cells, degenerative changes in the nerve c were commoner and neuronophagia was c spicuous Also the inflammatory foci were m widely spread, the cranial nerve nuclei ra showed degenerative changes and the cord more extensively involved. Although in cases the differences found are not sufficient make a differential diagnosis from Econo disease certain, the more severe can readily be distinguished and closely resemble the picture of Japanese type B

It thus seems that the answer to our questi so far as it can yet be answered, is that St Louis epidemic is not the same as Econo disease, it approaches most nearly to Japanese type B. There is, however, one importa piece of information which this preliminary sur cannot give and it must be given before the can be called complete. What are the after-effe of the St Louis epidemic? Time alone can sh In one of the papers it is said that after the ac stage some of the more severe cases develo Parkinson's syndrome in mild degree; little information is as yet forthcoming similar survey been made in Europe nine months fter the first outbreak of Economo's disease in 918 possibly the information under this heading ould have been comparable A little later and ow different! There is a hopeful feature about he St Louis outbreak The after effects of he Japanese type B epidemic were less numerous nd serious than those of lethargic *encephalitis*, nd it may be hoped that the St Louis infec- on may resemble Japanese type B in this spect also

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[1] THE LANCET, 1933, ii 670, 811, and 931.

[2] Jour. Amer. Med Assoc, Sept 8th and 15th, 1934

[3] The opportunities for computing the incubation peri man were few, but certain observations were made and in s cases this was estimated at from four to fourteen days

No account of this epidemic would be complete thout a warm tribute to the team-work which ust have played an appreciable part in its control In one of the papers **Bredeck** and **Zentay** describe it under the title of Handling of the St Lou Epidemic of Encephalitis, and their descriptio shows not only the admirable rapidity with whic the various medical units—often widely separat in location and organisation—were brought a once into active coöperation to meet the emergency, but also the way in which civic and State authorities belonging to distinct and independent corporations were got into combination without waste of valuable time The result is one on which all concerned must be congratulated, and it may well be considered an object-lesson to the European nations

ANNOTATIONS

THE HARVEIAN ORATION

On Thursday last, St Luke's day, the Harveian ator, Dr James Collier, whose *oration is* substan lly reported elsewhere, commenced with a brief it eloquent summary of Harvey's services to science general and the Royal College of Physicians of ndon in particular He dwelt on the great ysician's pleasure in research and equal pleasure the promotion of good fellowship, and connected e harmonious atmosphere of the College with the luence of Harvey's benefaction, which received annual festal celebration for the 278th time the ne evening In his own country Harvey was more tunate than many great pioneers and inventors ve been, he conquered dissentients by their rrenders But abroad his discovery met with position for a time and though his opponents re than once became his advocates later there still those who do not see that Harvey was the st to solve the problems Harvey was, as Dr llier said, from the manner of his work in experiment d in observation of proofs, the inventor of medical earch as understood to day The law which he d down of "Omne vivum ex ovo" is the starting int in the idea of evolution In the flight of thought pressed in his words "Epidemic contagious and stilential diseases scatter their seeds and are pagated to a distance through the air and in lden fashion silently multiply themselves by a d of generation" he was the prophet of bacteriology come The opponents of Harvey as the veritable coverer of the circulation of the blood are wont to ote sentences and expressions from bygone writers, ging back to the most distant classical times, ich can be taken to foreshadow the fact that the od goes round the body Many examples can be nd in association with other fundamental dis eries where somebody has said something which be regarded as prophetic but this kind of mbration has no value for science Harvey was content with a few expressions of brilliant ition As his great idea became clearer to him persisted in experiment and investigation with sult that has been aptly described by Sir Arthur th as a perfect piece of detective work—he mbled his facts, tested them collated them, and n them made the perfect deduction There is no parison to be fairly instituted between the mulgator of the happy idea or even him who ws up his idea with zeal and arrives at approxi- ions and the patient conscientious investigator furnishes the complete answer to the problem, such was Harvey

In Dr Collier's delightful oration we have picturesque notes on the circumstances *surrounding* many fundamental medical discoveries *and* on the personalities of the pioneers

THE PRINCIPLES OF RESUSCITATION

We have become familiar of late years with the use of carbon dioxide as a respiratory stimulant, but according to Prof Yandell Henderson[1] it is more than this, and in some kinds *of* asphyxia its restoration to the body may be almost as important as that of oxygen In the course of two papers he details three different physiological types of asphyxia and the most suitable treatment *for* them, he then takes well known clinical asphyxial conditions and describes individually *their* characteristics and *treatment* These papers are really a practical monograph on resuscitation, and they should be in the hands of everyone whose work brings him into contact with cases where it is necessary The subject matter is already condensed, and only *one* or two of the conclusions can be mentioned

In the most acute form of asphyxia, well exemplified by drowning, the cardinal feature is *failure of the* respiratory mechanism, and, once this is *restored* to normal, recovery is usually uncomplicated For such cases all other treatment *fades into insignificance* beside the urgency of artificial respiration Carbon monoxide poisoning represents a *subacute form of* asphyxia in which the mechanism of *respiration itself* is not dislocated, so that artificial *respiration* is not necessarily of primary importance, *the victim* is often breathing spontaneously *He is, however,* suffering from lack of oxygen, and the degree of deprivation commonly experienced, acting over a relatively long period, may be sufficient to do permanent damage to the tissues The most pressing requirement here is a rapid restoration of the normal conditions, and the most obvious remedy is the administration of oxygen This acts too slowly. During the poisoning, in an attempt to get an adequate supply of oxygen, the patient has overbreathed and washed large quantities of carbon dioxide out of his system and this apparently has more profound effects than the mere removal of the normal stimulus to respiration The alkali reserve is diminished and a state of acidosis supervenes the remedy for which paradoxically, is the administration of carbon dioxide This cuts across biochemical theories and indeed, an animal, in which acidosis has been induced by the actual injection of acid, rapidly succumbs to carbon dioxide To distinguish the asphyxial type of acidosis, Prof Henderson has introduced the term "acarbia"; he is unable at present to give it a theoretical background but insists that the foundation for this must be the fact that it is cured by carbon dioxide inhalation The third type of asphyxia is chronic, and characterised by shortness of breath and continual oxygen-debt, and occurs in heart disease and anæmia The indications are, of course, for oxygen and additional red blood corpuscles

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[1] Jour Amer Med Assoc [illegible] 1934 [illegible] and Sept. 15th, p [illegible]

Prof. Henderson steadily emphasises the value of carbon dioxide in its dual rôle, and he says that where the sensitiveness of the respiratory centre has been blunted, mixtures containing 20–30 per cent may bring about dramatic recovery The applications of these principles of resuscitation to individual cases are well worth the study of specialists; the sections on asphyxia neonatorum and anæsthetic depression are particularly interesting The author discusses the suitability of various mechanical devices and points out dangers associated with some of those on the market.

THE LONDON AND COUNTIES M P S. AND "1921 DENTISTS"

THE resolution recently passed by the Council of the London and Counties Medical Protection Society which makes dentists admitted to registration by the 1921 Act eligible for membership under certain conditions marks a change in the policy of the Society which is likely to have interesting developments The division between dentists possessing a qualification by examination and those admitted to registration by the Act is breaking down. The standards of ethical practice enforced by the Dental Board have done much to weed out those to whom the Act had clearly given an undeserved status, while panel dentistry has been a useful factor in bringing the two sections of the profession closer together, and in the Public Dental Service Association all registered dentists meet on a common basis of membership There seems good reason therefore to allow 1921 dentists to share the advantages of professional protection offered by a society with such an exceptional knowledge of the problems of medicine and dentistry as the London and Counties An increasing number of qualified dentists are becoming associated with 1921 dentists in practice and the difficulties which have arisen in the past because the Society could not accept the latter as members will now be obviated. The clause, which insists on a recommendation by two members of the Society, one of whom must be a dental member, is a reasonable one, for it is obviously necessary for the Society to insist on both professional competency and due ethical standards.

HOSPITAL SUPPLIES AN EXTENDED SCHEME

WHEN the Central War Hospital Supply Depôt closed down after the war, its work was continued in aid of civil hospitals by the League of Remembrance (1914–1919), which has developed an organisation of the utmost value to the 400 institutions which have sought its help The League has twice had to move into larger premises, and now occupies a beautiful house at 48, Bryanston-square, London, W 1. Here workrooms are provided where garments, surgical dressings, swabs, and linen articles are made up gratis from materials sent by hospitals and strictly according to the patterns supplied. The funds for payment of the "remembrance workers" (widows or dependants of officers) in charge of each batch of voluntary workers and for the administrative expenses are supplied by subscribers to the League, of which the annual budget is over £3000 Last year 350 appeals for were received from hospitals and over 60,000 arti were delivered In response to a request from Gu Hospital the League has now undertaken to over 170,000 theatre sponges annually, a regu supply of 3400 being despatched every week T commitment necessitated the enlistment of a spec staff for the work, and arrangements are being in conjunction with matrons of the London hospi to appoint to the staff of the League 12 accep candidates for the nursing profession who are young to be admitted, or are awaiting a vacanc the hospital preliminary training school Candid must as a rule be over 18 years of age and undertake to stay for approximately an acade year—i e, from October to July inclusive, m called up by their future matrons to fill an pected vacancy Time will be allowed for atten at lectures on the recommendation of the ma concerned. The work of the girls will include making of hospital dressings, bandages, and ward equipment; they will also, by ass *in the various departments of the League,* gai insight into methods of management, dis office work, reception, catering, still room, and duties They will provide their own simple (brown overalls and caps), and will receive b residence and pocket money (£12 a year) scheme is welcome not only as a sign of the activities of an admirable organisation of volun labour but also in so far as it will enable at lea few candidates for the nursing profession to b the gap between leaving school and entering hos Further particulars of the work of the League be obtained from its honorary administrator, E H. Gibson.

RECURRENT PNEUMONIA

THE attacks of bacteria or viruses usually lea patient with immunity or resistance to su infection by the same organism; but there are exceptions to this rule—notably, erysipelas rheumatic fever, and pneumonia Indeed, it that one attack of these diseases predisposes to of the same kind In pneumonia a history of pr attacks has been noted by various authors in 13 to 31 per cent of cases, and instances of rep recurrence are often quoted Various expl have been suggested, such as constitutional predi tion to pneumonia, local loss of resistance in a once affected, and persistence of the inf organism More recently the suggestion has put forward (R Cole,[1] R Cruickshank[2]) that attack of lobar pneumonia is due to a dif specific type of the pneumococcus, of w we now know, there are many This theory ha examined by M Finland and H W Winkler review of 57 cases, mostly adult Among the considered are the character and location pneumonia in each of the illnesses, the len interval between them, the bacteriological fi and the effect of specific serum therapy Reg the character of the pulmonary lesion, Finla Winkler include—rather unwisely perhaps of the difference in pathogenesis between and lobar pneumonia—cases in which either first or second attack the infection was br pneumonic in type; they make the in ervation that a large number of patients, marily affected with lobar pneumonia, had more tensive and "atypical" lesions during the recurrent ack Recurrences are certainly common in the eumonias of children, where broncho pneumonia the predominant lesion, for example, Ford[4] a follow-up of 184 children with pneumonia ports recurrent attacks in 51, the predisposing tors being persistent infection of the upper piratory tract and an inadequate period of valescence

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[1] Nelson's Loose Leaf Living Medicine London, vol i, p 208

[2] The Milroy Lectures, THE LANCET, 1933, i, 563

[3] Amer Jour Med Sci, September, 1934, p 919

When they come to the bacteriological data, land and Winkler record seven cases in which the ond attack was apparently due to the same specific pe of pneumococcus (I, II, or III) as caused the st infection Thus, although in three of the en cases the recurrence was broncho pneumonic type, the belief that recurrent attacks of lobar eumonia are always due to different serological es of the pneumococcus does not seem to be able Two noteworthy points emerge from an lysis of these cases in four patients the reinfection urred within a year's time (4 weeks, 6 weeks, onths, 9 months) and each of them was treated h specific antiserum in the first attack These s make one ask whether the recurrence was ociated with the persistence of the original infecting anism in the throat (since Cruickshank has shown t chronic carriers of types I and II pneumococci not uncommon) and whether serum treatment rferes with the natural development of immunity land and Winkler also show that the sites of the monary lesion and the infecting types of pneumo us, both in the early and late attacks are very ilar to those usually observed in pneumococcal umonia The impression is left that while attacks of lobar pneumonia lessen local resistance so predispose to broncho pneumonia, there is also nstitutional predisposition to pneumonia which lts in recurrent infection, usually with serologically rent types of the pneumococcus

COMMON SALT IN ADDISON'S DISEASE

ARLY this year[5] we reviewed briefly the relation he suprarenal bodies to sodium metabolism and r attention to the claims of several American ors that exhibition of sodium chloride is capable lieving the symptoms of Addison's disease In irmation of these claims two case reports have been published in our columns[6] Both these s presented the features typical of Addison's ase, both showed marked symptomatic improve t on receiving sodium chloride but whereas in Sears' case the blood sodium was raised from a ormal to a supranormal figure by treatment in Hinds Howell's case it was only slightly below normal level before treatment and was unaffected he administration of salt although symptoms greatly ameliorated The explanation of the ences between these two cases is obscure ibly the sodium : potassium ratio is of importance n the first case the reduction in the blood potas while the patient was receiving salt was even striking than the increase in the blood sodium, second case figures for potassium are not given ever the interpretation of the findings, the rtant fact is that both patients improved with

extension of the uses of salt in this disease is suggested by Dr W S Nettrour and Dr E H. Rynearson, of the Mayo Clinic,[7] who have used a salt free diet as a provocative test for Addison's disease Harrop, Weinstein, Soffer, and Trescher suggested the possibility of this test last year,[8] but Nettrour and Rynearson appear to have been the first to record its employment Their patient had features suggestive of Addison's disease but no pigmentation, a few days on a salt free diet greatly aggravated the symptoms and the subsequent administration of large doses of salt was followed by their complete alleviation Cases where Addison's disease is suspected but cannot be proved are not uncommon, and a reliable diagnostic test would certainly be of value A possible snag about this one is that not all cases of Addison's disease do not respond to salt, and would presumably not react in a typical way to its withdrawal from the diet Moreover the case reported by Nettrour and Rynearson suggests that salt-free diet is not without dangers as it may produce a severe relapse which if it has no more serious effects greatly increases the patient's discomfort One is tempted to add that as a rule it would be more humane to determine whether large doses of salt would ameliorate the symptoms before seeing if deprivation of it would aggravate them Nettrour and Rynearson disclaim any opinion on the reliability of the test, but record the valuable observation that in this particular case it established the diagnosis

MISTAKEN IDENTITY

THE possibility of mixing babies born in a maternity home or hospital is generally recognised, and in the United States, where these institutions are often on a large scale, various systems of identification have been devised from time to time to ensure that the babies are handed to the right parents The problem of preventing such confusion in a grave emergency arose in a famous London maternity hospital during the war when a bomb was dropped within a few hundred yards of its building The mothers were taken by lift to the basement while batches of babies were hurried down the stairs in the arms of students and nurses No catastrophe occurred but a system was devised to meet such emergencies in the future In 1925 at the end of 28 years' experience at the head of obstetric service in five different hospitals Dr J B De Lee, of Chicago came to the conclusion that no single method of marking was absolutely safe but he was able to describe arrangements which went a long way towards making identification automatic and independent of human forethought[9] The ritual involved the use of three sterile tapes an aluminium tag and an adhesive plaster all numbered (the numbers being read aloud by three separate assistants) a telephone message to the parents, and footprints taken in duplicate The method seemed as free from loophole for error as human ingenuity could make it Two years later the famous Watkins and Bamberger infants appeared in Chicago, though not in Dr DeLee's institution, The babies went home on the ninth day, after which each was discovered to be marked with a [illegible] of adhesive tape bearing the other's name [illegible] the health commissioner 13 medical experts and two family practitioners had tried to [illegible] the tangle the parents decided to ignore the [illegible] and to be guided by the shape of the infants' [illegible] being of Semitic and the other of [illegible] But even so they changed their [illegible] a few weeks later and exchanged the babies. Now the same problem has arisen in a Liverpool corporation hospital in connexion with an older child. Dorothy Price, aged 1 year and 9 months, was sent to Belmont-road Hospital, from which she was transferred, six weeks later, to Fazackerley Hospital for treatment for diphtheria. At the end of another six weeks the parents were notified that the child was well, and she was taken home by Mrs. Price The father, however, had some suspicion that she was not his daughter Three weeks later she was fetched away in a car and, in Mr. Price's presence, handed over to another man of the same name. A second child, also named Dorothy Price, was offered to the parents, but they stated she was not their child and refused to accept her. An interesting point is that the original Dorothy Price showed great reluctance to go home with the woman who purported to be her mother

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[4] [illegible] Med Jour August 1934 (Proc Roy Med Chir [illegible] 14)

[5] THE LANCET 1934 i 137

[6] Ibid, 1934 i, 930 and 1116

[7] Proc Staff Meetings Mayo Clin [illegible]

[8] J [illegible]

[9] See THE LANCET 193[illegible]

New-born babies are apt to be very much alike, but it seems almost incredible that a child of 21 months should not have developed characteristics which would make her easily identifiable by her own parents, even after an absence of three months, and it is hardly reasonable to expect a hospital to carry out a system of identification for every patient of whatever age In the case in question the mistake apparently arose at the Belmont-road Hospital, where two little girls of the same name were admitted at about the same time—though there was six months difference in their ages One developed diphtheria and had to be transferred to the Fazackerley Hospital, and the address of the other was accidentally sent with her. The Fazackerley Hospital is thus entirely exonerated, as it had no knowledge even of the existence of the other child

A subcommittee of the port sanitary and hospitals committee held an inquiry at the Belmont-road Hospital, and found that the arrangements for transfer and discharge of patients were such that accidents of this kind were impossible if those in charge carried out their duties satisfactorily.

> "On admission a tape bearing the child's name is attached to its ankle A record paper with the child's full name and address is fixed over the bed and an identification card bearing the child's full name and address, age, and names of parents is filed in a cabinet. When the child is transferred from the institution the record paper, identification card, and tape on the child's ankle should be compared before the transfer papers are made out."

Failure of the human element was responsible for the present incident, proper precautions not having been taken, and the defaulting parties had been cautioned. The chairman of the subcommittee said the parents of Dorothy Price were now satisfied that the child in Belmont-road Hospital was theirs. Perhaps the only perfectly safe way of guarding against mistaken identity would be to register finger-prints of all patients at the time of admission. But this, except for infants, is a counsel of perfection.

POLIOMYELITIS SERUM

A WEEK or two ago the newspapers contained a harrowing account of efforts made by a hospital to secure serum for the treatment of a patient with acute anterior poliomyelitis. Those who may at some time need such serum may like to be reminded of two sources from which it can be got For the pooled serum of convalescents application may be made to the medical superintendent of the Western Hospital, Seagrave-road, Fulham, London, S W 6, who is in a position to supply outfits, each sufficient for one patient, on condition that a full account of the and the results of treatment are later furnished the secretary of the Medical Research Council the practitioner responsible This serum, which prepared by the Lister Institute (Elstree) and issued in coöperation with the Medical Re- Council and the London County Council, is inten solely for the treatment of cases in the preparal stage of illness. For prophylaxis an antiserum been prepared, also at the Lister Institute, by ising horses, and an intramuscular dose of 5 is recommended for the protection of those exp to infection—especially contacts during an As was mentioned in our issue of Sept. 15th, a has lately been sent from Elstree for use in outbreak of poliomyelitis in Denmark. The Instit immune horse serum may be bought through M Allen and Hanburys Ltd.

AT the Royal College of Physicians of Dr. J. H Sheldon will deliver the Bradshaw on hæmochromatosis, on Thursday, Nov. 1st, Sir Humphry Rolleston the FitzPatrick on the history of the endocrine organs, on the 6th and Thursday the 8th. Both lectures be given in the College at 5 P.M., and any me of the medical profession will be admitted presentation of a card.

ON Thursday, Nov. 1st, at 5 P.M, at the ho the Royal Society of Medicine, Mr. Herbert T consulting surgeon to the ear and throat of University College Hospital, will deliver Semon lecture for 1934. His subject is inflammation of the maxillary antrum and accessory sinuses (some clinical manifestatio its pathology), and the chair will be take Mr W. M. Mollison.

A CIRCULAR has been received by members medical profession in which Sir Henry Bracke and Mr. Bishop Harman set out their hope again supported by the suffrages of the profes their position as Direct Representatives on the Medical Council. The claims of both are ob We understand that the President of the Cou also proposing to submit his name for the of Direct Representative for Scotland. It wo a graceful recognition of Sir Norman Walker's services to the profession if his election unopposed.

HANDICRAFTS AT TUBERCULOSIS DISPENSA On Wednesday, Oct. 24th, at 3 30 P M, the Lord of London will open an exhibition of handicrafts m students attending classes at 13 tuberculosis disp in London On Thursday at the same hour it will by Lord Snell, chairman of the London County when an address will be delivered by Sir Henry G Working demonstrations will be given in the cour afternoon and the products will be on sale "guara it is stated, "free of infection." Further particu the hon secretary, Standing Conference of Metr Borough Tuberculosis Care Committees, Pembur Drive, Rickmansworth.

YORK COUNTY HOSPITAL —The Princess last week opened a new out-patients' departme a women's surgical ward in this hospital has been £25,000, not all of which has yet been £500 has been given by the honorary medic surgical staff

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXIII.—PROGNOSIS IN HYSTERIA AND ANXIETY STATES

It is of interest when reading contributions on e subject of prognosis to note that nearly every ithor is compelled to make constant reference treatment. Therapeutics are scoffed at so often at it is gratifying to find that hardly anyone is a position to discuss prognosis helpfully without ing this. It has been made abundantly clear previous articles in this series that in many ocesses prognosis depends not only on the nature the illness but on the facilities for treatment which n be afforded. There are of course certain condi ns such as coryza where, whatever is done it is near certainty as possible that the patient will come quite well, there are others, like established drophobia, where it is almost equally certain that will die, but for probably a majority of illnesses gnosis depends to a great extent on treatment, d certainly this is true of the two psychoneuroses— steria and anxiety states.

ENVIRONMENT

To a considerable extent, no doubt, the environ nt of the patient must play a part in the determina n of the result, as must also his make up. The sence in the home of a drunken bullying spouse y nullify any treatment however wisely conceived i skilfully carried out, and there are many what may call high-grade defectives who find life remely difficult, and for whom neurosis affords escape from its trials. But to a far greater extent in is, I think, appreciated the prognosis depends treatment. After treatment the most impossible atives can often be tolerated, if they cannot, atment may enable the hitherto patient underdog leave the bully. Even a mental defective may be ped by being placed in a special environment ere the strains and stresses to which he is subjected l be constantly modified in his favour so that his may succeed on a less strenuous basis. Such erson may then for years appear to be normal. s obvious that treatment of the relatives is often necessary as treatment of the patients. If they be got to see—as they often can—that their own duct has helped to precipitate the patient into morass in which he now is, the prognosis will decidedly improved.

t one time I had hoped to be able to give figures ch might be of statistical value in helping to solve problem of the prognosis in these disorders after atment. Every patient who has passed through Cassel Hospital for the last 13 years has subse ntly received an annual inquiry about his health, the replies have been recorded and tabulated. wever, the number of answers received from those were no longer recent patients was too small to d a basis for statistics. Results known for a r or two only are of little value. Almost any kind reatment will be followed by recovery in large mbers of neurotics and such states of well being easily last for a year or two. In the present of psychotherapy these temporary recoveries of little interest. What interests everyone who ccupied in the treatment of these patients is ther it is possible to make such fundamental nges in a patient that he can be relied on not to be subject to neurotic illness in the future. It seems fairly certain that the person who is cured by what may be termed irrational therapy, such as electricity or some other agent of whose mode of action we are ignorant, is less likely to keep permanently well than one whose case has been dealt with on rational lines. "Permanent" is a strong word. We shall see presently to what extent its use can be justified in this connexion. I think we may say that without doubt it is possible so to change an individual patient so that he will not be liable to break down in future. By this is meant that the patient should be changed in character in such a way that he does not take refuge in illness every time that life becomes exceptionally troublesome. Here we may find that a too short follow-up may give us results which are unjustifiably gloomy, for a character change in a favourable direction may be started by the doctor, but may be of slow growth, the full results not being displayed for a year or two.

There is one thing further which must be said with regard to the interpretation of after histories—viz., that it is easy, unless one is alert, to include examples of the manic depressive psychosis in our lists. The recovery of these patients, of course, is quite independent of treatment, and it is not always easy to be sure from which disorder—psychosis or neurosis—a given patient is suffering. There are, however, a sufficient number of clear-cut cases of [illegible] where it is quite certain that the condition is [illegible] that of psychosis, to give us a basis for [illegible] whether or not these patients are curable in the [illegible] that they can be so changed that they do not [illegible]

THE CRITERION OF RECOVERY

Though after-histories cannot be used [illegible] percentages of recoveries, they do [illegible] that such changes may occur in [illegible] so that these do not tend in [illegible] recurrence of their nervous disorder.

What is to be the criterion of [illegible]—to what extent can the subject of [illegible] really well? There is no doubt [illegible] proportion can become as well as [illegible]

A woman of 44 who for 20 [illegible] from one rest cure to another, unable [illegible] these years to dust a room without [illegible] for three weeks after it, thinking of [illegible] she dare do and what she dare [illegible] weeks of treatment which consisted [illegible] not every day—she became [illegible] 13 years. The word "[illegible]" [illegible] to this example as [illegible] certainly not a psych[illegible] effected. By "well" I [illegible] anyone else, runs her [illegible] and [illegible] is "unexhausted" [illegible] walked 20 miles [illegible] on

A man of 40 [illegible] for 16 years as a [illegible] he had frequent [illegible] life he had been [illegible] and often [illegible] had been [illegible] treatment [illegible] remained [illegible]

There are [illegible] any [illegible] of th[illegible]

IMPORTANT FACTORS

It is commonly said that the age of the patient and duration of symptoms are of importance in prognosis. Neither of the patients mentioned was young, and both had been ill for a long time. Patients recover at all ages, but apparently age may make things more difficult, because the older one gets the less there may be to look forward to. Thus a man, a bachelor who had sold his business 16 years before coming under treatment because he had fallen ill, had little to look forward to: he was about 45, and felt he could not start again Again, with a woman at the menopause who had been afraid of marriage, though she wanted children very much, it was too late for her to get what she wanted even if her fears were removed It is not the age of such people but the absence of a future which makes them difficult to treat The patients who recover usually have strong reasons for wishing to get well, and this applies to the two examples I have quoted.

With regard to duration of symptoms a difficulty frequently presents itself in early cases, although everyone professes to hanker after them for treatment. Patients who have been ill for a short time only are apt to resent a therapy which proposes a character change. For many the illness is not so distressing as to compel them to seek to undergo so disagreeable a process. For others the illness is what has been called "a convenient arrangement" It is after they have been ill for a considerable time and the inconveniences of being ill become more and more manifest that coöperation is often easier to obtain

What then are the factors of importance in prognosis? They are to be found not only in the patient but also in the doctor, for curable cases the most important factors reside probably in the latter. He must be able to believe that it is possible to help these patients to such an extent that they may become quite well. If he doubts the possibility of this he will not have the satisfaction of seeing them become well. For many doctors this is a difficult postulate. Much of their training has led them to scepticism; they have been sedulously taught to distrust therapeutic agents; they have almost always been taught that it is extremely bad form to say—and I judge even to think—that they "cure" anybody. They must never claim cures. And this is probably a principal reason why many neurotics are helped so much by quacks of all sorts. The quack does not doubt that he can cure nor let the patient forget it. The duration of his cure is, I think, only a short one; but if he had no success at all no one would go to him. We need not really claim to do more than Ambroise Paré did, but we might claim at least as much, with good consciences—viz, that our dressing of the wound is of some importance.

Some of the factors in the patient have been indicated already. They may be in consciousness, although the patient has not correlated them with the fact that he is ill For many patients there is, as we have seen, an apparent advantage in illness—the war cases and the civilian compensation cases provide the grossest examples of this. By illness the patient may be successfully shirking painful or merely tedious duties, or getting away from a distasteful environment. In many instances frank discussion of these things may result in such character change that in future this bad method of dealing with difficulties is no longer resorted to. I have found in my own practice that when this line of treatment succeeds there is often a change of a lasting character.

The difficulty may, however, be one which unconscious and not at first obvious to doctor. Prognosis will then depend on (1) whet the difficulties can be brought into consciousness (2) whether they can be dealt with successfully the patient if they are so brought. I do not believe t the mere bringing of them into consciousness enough; and the warning must be given that i unconscious trouble is made conscious and is found to be of a kind with which the patient ca deal, to which he cannot reconcile himself, his c tion may be made much worse, not only for the being but permanently This is not to analysis of the unconscious, but to emphasise it is a difficult and delicate procedure, somet analogous to a surgical operation and to be with a sense of grave responsibility.

ANOREXIA NEUROSA

There is one small subdivision of the psychoneu where I am able to give more exact figures, th the patients with anorexia nervosa. In the las years I have had under my care 19 patients with strictly classical symptoms of that disorder—anorexia, amenorrhœa, emaciation, all prese young unmarried women. It is known that 15 of are now well. Two have been well for nine y three for eight years, and the remainder for times Two have been lost sight of. Two are d one, after five years of good health, from septic the other from a relapse of anorexia. In all t examples the treatment was rest in bed, full fe and therapeutic talks on the conscious level

THE TIME FACTOR

There is one more point. It is often said that treatment of these patients takes endless time Ev where a formal analysis of the unconscious ha undertaken, a large proportion of my successful have been short. Out of 250 patients who to knowledge have been well for at least three ye many of them for much longer—100 were tr for less than three months, 50 for less than six m They were not seen every day; their period treatment were often not more than half an h a time It is not length of treatment, but h one can change fundamental ideas that matter

T. A. ROSS, M.D., F.R.C P.,
Late Medical Director of the Cassel Hospita
Functional Nervous Disorders

HOSPITAL EXTENSIONS.—The Marchioness Cambridge recently opened a maternity block w at a cost of £3900, has been added to the Brid and South Shropshire Infirmary. The b includes a main ward with six beds, a labour two private wards, an isolation ward, and a —The Duchess of Rutland has opened at the R Memorial Cottage Hospital, Oakham, a small win sisting of a children's ward of five beds Against ea an electric light has been inset in the wall about from the floor to serve as a night light which will no on the patient's face.—The extensions of Ald Hospital have been completed by the opening b R Alexander of a children's ward of ten cots, with in an emergency, for nearly double that number

AN ANNEXE TO PRESTON HALL—The B Legion on Oct 1st took over Douglas House, E mouth, which will form a seaside annexe to institution at Preston Hall Douglas House has l been administered by the United Services Fund convalescent centre for tuberculous ex-Service It will add 75 beds to the number already availa Preston Hall.

POST-GRADUATE LECTURES

our two last issues, we publish summaries of the lectures given this autumn at post- e courses in the London teaching hospitals urne's and Dr Clark-Kennedy's were delivered Mary's, and Dr Himsworth's at University e Hospital

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BOUR—THE SUPREME DIFFICULTY

(Mr Aleck Bourne)

Contrary to widely held views and teaching, the ief difficulties of labour are due to disorders of *nction* as opposed to those of mechanics A perficial view of labour regards it as chiefly a echanical process, to be treated by mechanical thods—whence the surgical turn of mind of many those who practise obstetrics Conditions of labour, first sight purely mechanical, cause difficulties her by an associated failure of function than by normal mechanics

By function I mean uterine contractions and ordinated relaxation of the cervix and perineum ilure of adequate contractions I regard as the preme difficulty in labour Even such abnormali s as contracted pelvis, placenta prævia, occipito sterior and breech labour—conditions which appear be purely mechanical—are largely overcome ovided the contractions are strong, that is by good action For example, the majority of women with vic contraction will pass the average-sized fœtal d provided contractions are strong enough to ould the head, the bleeding caused by placenta ia will be controlled if contractions are sufficiently ong to press the presenting part down on the eding area, and it is a common experience that posterior position of the occiput can be rotated, r flexion, by the uterus when acting strongly ther all the indirect troubles caused by delayed our such as exhaustion, dead fœtus, sepsis and rations due to manipulations necessary for editing labour, and often serious hæmorrhage st be set down to feeble, inadequate contractions

t is not too much to say that could the force of rine contractions be properly controlled—in either ection of increase or decrease—by simple drug or er treatment, a very large amount of obstetric iculty and danger would entirely disappear

nertia is common in its minor forms It requires le treatment and is of no danger to either mother child If however, labour endures for more than hours, anxiety often begins, risks become more more likely, and the difficult question of inter nce will arise It may be of interest to look at incidence of inertia In conjunction with A C , I analysed the records of over 4500 consecutive s of labour at Queen Charlotte's Hospital and nd that delay of more than 48 hours due to inertia urred at the rate of 1 in 150 labours but of rgency admissions the rate rose to 1 in 18 More half the cases (49) were between the ages of 20 30, while only two occurred after 40 years iparity has an important influence No less than er cent of the cases were primiparæ which is in rd with our common experience Expressed in her way 1 in 60 primiparæ and 1 in 300 multiparæ r from severe inertia

point of considerable importance is the possibility recurrence of inertia in subsequent labours If a woman has suffered all the pain and exhaustion of delay in her first labour she is naturally apprehensive of similar trouble in subsequent confinements It is therefore important, if possible, to be able to reassure her on this point The figures show that it is unlikely that inertia will be repeated but on the other hand a woman who has had a normal first labour may yet have a prolonged subsequent labour

Normal presentations were found in nearly three-quarters of the cases, and twins only formed 2 per cent of the cases The breech presented in only 6 per cent Organic complications of pregnancy were uncommon except albuminuria, which happened in 18 per cent —i e, nearly 1 in every 5 cases This high incidence may be related to the influence of induction on the length of labour, which is often performed for albuminuria Of the 49 cases, 25 per cent followed induction of labour which is a sufficiently high proportion to incriminate induction as a cause of inertia Incidentally, this is a strong point against induction of labour as a treatment for contracted pelvis, where strong contractions are particularly necessary Premature rupture of the membranes occurred in 60 per cent of all the cases, but my experience makes me doubtful whether simple premature rupture of the membranes in an otherwise normal case tends to lengthen labour It is a well known clinical fact that pure inertia is usually a complication of the first stage of labour It is supported by our own observations, which found that in 22 out of 47 cases the second stage did not exceed the normal duration and was followed by spontaneous delivery

Despite the vast amount of clinical observation of labour and laboratory work on the contracting uterine muscles we know very little of the cause of inhibition of the uterus It cannot be that the uterine muscle is feeble or incapable of contracting, for we often find a quick second stage following a first stage that has lasted some days, and also the same uterus will contract normally in subsequent labours Similarly, though cervical spasm does occasionally prevent dilatation manual exploration of the cervix under anæsthesia usually finds it unexpectedly soft and dilatable, especially after many hours have passed Graphic analysis of human uterine contractions which I have made with Dr J H Burn shows the sluggish uterus to be contracting irregularly in both time and force The summit of the contraction wave is sharp, showing that the uterus does not hold on during its systole Speculation on the cause of uterine inhibition suggests that one or two factors are at work First it seems certain that an active nervous inhibition by way of the sympathetic plays a real part and secondly, it is probable that the muscle is in some way comparatively insensitive to the stimulating influence of the posterior pituitary hormone It is my experience that cases of real inertia do not respond to ordinary doses of pituitrin, in contradistinction to normal labour

We have two experimental observations of the human uterus in labour that are fundamental The first is that adrenaline injected during labour abolishes contractions entirely suggesting strongly that the sympathetic inhibits the uterus and secondly, that pituitrin stimulates the force and frequency of contractions A later observation is that acetylcholine which is selectively stimulating to the parasympathetic augments contractions for a short time after injection Apart from these facts we have little exact knowledge and experimental guidance on which treatment can be based.

The results of severe inertia are serious to both mother and child. Of the mothers five died (10 per cent); three of the deaths were due to sepsis and two were ascribed to chloroform poisoning In addition to the five fatal cases, 14 (28 per cent.) other patients suffered from various forms of infection. Of the children 38 per cent were stillborn, and a further 6 per cent. died just after birth There are few other complications of labour which exact so heavy a toll of maternal life as inertia, for it is indirectly responsible for hæmorrhage, sepsis, and injuries. A woman in severe inertia is in much greater danger than one who has a central placenta prævia or post-partum hæmorrhage, the mortalities for which in 1932 at Queen Charlotte's Hospital were 7 7 per cent and 2 8 per cent respectively

The diagnosis of the cause of delay in labour is important All cases may roughly be divided into two large groups, first, those whose delay is due to feeble contractions (true inertia), and secondly, a smaller group in which these contractions are normal or strong, but some mechanical difficulty exists which prevents advance. The two groups are not always easy to distinguish because the patient may react strongly to contractions which are mechanically inefficient, though very painful. Vaginal examination will give the information we need by revealing either no evidence of pressure or else all the signs of pressure easily appreciable Thus in the first group there will be no caput, no overlapping of the sutures, and no œdema of the anterior lip of the cervix In the second group these features (œdema, &c) will be obvious, and we know that the uterus has been contracting strongly for many hours.

To-day we are concerned with the first group. Many hours, even some days, may have passed and the os is still barely half dilated, the uterus is sluggish, the child is alive, and the mother is very tired Two points should be kept in mind at the outset. First, we know that if all mechanical conditions such as the pelvis and presentation are normal, delivery will probably be accomplished spontaneously or by low forceps without danger to either mother or child Secondly, we know that the oxytocic or stimulating group of drugs is disappointing, and that in a case of real inertia their effect is either negligible or too short-lived to have any useful result Lastly, we know that on the whole more risks and dangers are incurred by manual interference than by doing nothing Some patients must have manipulative help, but these are a minority, and even so it remains true that if victims of inertia, who have everything normal except the quality of their contractions, were all left alone to deliver themselves by the help of morphia and other sedatives, the results in the aggregate would be better than they are at present For simple delayed dilatation we have as yet nothing better than morphia, chloral, or other sedatives. Simple nursing measures such as the aperient and enema are effective for the minor cases.

Until the membranes rupture there need be no anxiety, but after this event has been passed by some hours, fatigue and risk to the baby increase, apart from the possibility of infection What are we to do for the comparatively rare case that resists all the ordinary treatment, assuming that the presentation is correct and the pelvis normal? There comes a moment when we feel that no further chloral will help, the patient is becoming exhausted, and the fœtal heart is suffering. At this moment, which can only be determined by experience, I believe woman should be anæsthetised and the of the os explored by the hand. It is surprising find how much softer it is than has been Very often it can be dilated without risk of In this case the forceps should be applied and head held while the rim of the os is pushed up first at the back, then the sides, and lastly the edge. When the cervix has disappeared by this and careful manœuvre the head is gently pulled and delivered slowly in order to avoid the risk tearing of the cervix by the shoulders Should impossible to dilate the os without risk of deep I would advise application of forceps, if the os admit the blades, and continued traction by tying a weight of about 4 to 6 lb to the of the forceps. Fortunately these extremely cases are rare, but when they occur they gravest anxiety.

The prevention of inertia is chiefly accomplish giving the woman confidence, that is, by her fear of labour during the antenatal Often this fear is suppressed by a strong effort, and the woman may not appear to be but when the pain of labour begins the fear exerts its malign effect in causing inhib contractions. It is necessary not to suppre but to exorcise it by confident reassurance.

THE CONTROL OF DIABETIC TREATM

(Dr. H. P. Himsworth)

In the treatment of any disease it is to watch closely certain symptoms and ph which experience has distinguished as a indications for the modification of treatment prognosis at that particular stage of the disorder the disease is brought under control the more o signs and symptoms disappear and are replaced less obvious evidence of disordered function, thus the different signs and symptoms assume order of importance relative to the particular of the disease under consideration Diabetes is no exception to this generalisation In the advanced coma the signs of immediate urgency those revealing the state of the circulation, in stage of "balancing" the most important those of disordered metabolism; in the diabetic patient we are concerned with the or absence of the sense of normal health.

Cases of coma fall into two groups. The first is made up of cases of uncomplicated diab tion; the second group consists of those cases of coma in which the severity of the di intoxication is overshadowed by the of the circulation Clinically treatment of the group falls into that of the "balancing" stage treatment directed solely to combating the de metabolism is sufficient to ensure recovery; the second group differs in that although the de metabolism requires treatment as energetic cases of the first group, this treatment alone is sufficient to bring about recovery unless it is com with vigorous measures to support the circulation

In these cases of coma the signs of an imp circulation are closely connected with tho dehydration. The failing circulation is rev by the cold extremities, weak pulse, and low pressure; the dehydration by the soft inelastic skin, and dry mucous membranes.

atient is to recover, measures directed against these angers must accompany those directed against the sordered metabolism The patient is laid flat, e foot of the bed raised, warmth applied, and xygen administered Large quantities of fluid are ven *slowly* intravenously A rate of two pints in hours is quite fast enough, as a more rapid introuction of fluid may cause the heart to stop Personally give 10 per cent glucose in normal saline intraenously (glucose 2½ ounces, salt 1 drachm water the pint) and thus combine the treatment of the abetes with the treatment of the circulatory failure awrence advises hypertonic saline and in some cases per cent gum arabic solution, whilst Hetzel suggests ood transfusion for desperate cases Drugs are of tle avail Adrenaline ♏ 5 intravenously has been commended, but I am of the opinion that insulin ven intravenously has the most beneficial effect a favourable case the circulation will be found to prove before the patient regains consciousness but will be some considerable time before all the signs dehydration have disappeared

The stage dominated by the circulatory picture being ssed, the signs of disordered metabolism assume the ice of importance This second stage includes all ies from that of diabetic intoxication (ketosis) thout circulatory failure up to the balanced diabetic ow wish to discuss the relative value of the signs cerned

To be of any use the guiding sign must satisfy criteria (1) it must agree with the clinical dings, (2) it must indicate whether the disease progressing or retrogressing

From the practical point of view there are three in tests by which we can gain an insight into the gree of metabolic derangement at any particular ie These tests are the estimation of the blood sugar testing of the urine for sugar, and the testing of the ne for ketones

The estimation of the blood sugar is by most horities regarded as the method of choice If we ly the first criterion, we find that this test imme tely fails In coma we see the culmination of the betic processes and one would expect some corre on between the height of the blood-sugar and the ree of coma One has only to examine a series of s of coma to see that no such correlation exists blood-sugar may be anything from 2000 to mg per 100 c cm But diabetics are often ountered, up and about, with blood sugars far ve 200 mg per 100 c cm, and I have seen a fectly conscious diabetic admitted to hospital h a blood sugar approaching 900 mg The test ilarly fails to satisfy the second criterion that it uld indicate whether the patient is improving egressing Some time ago a patient was admitted this hospital in full coma with a blood sugar value 150 mg per 100 c cm, and an hour after intensive tment was stopped she was talking sensibly, ugh her blood-sugar level was 1200 mg per 100 In this case the change in glycæmia was in tly the opposite direction to the change in the al condition In an out patient clinic diabetics blood-sugars constantly above normal are not mmon Provided other more important factors are in check, it has been my experience that they e to no harm It thus appears that the blood sugar e satisfies neither of the criteria required by an l sign. The utmost we can say for the test is that if ries of estimations show a steadily rising blood- r, then the patient is probably getting worse—ece of information that can be obtained quite as easily by noting the appearance and subsequent increase of glycosuria

As regards glycosuria I may say at once that the *amount* of sugar excreted depends mainly upon the urine output of the patient, whilst the *concentration* of urine sugar reflects the variation in blood sugar The objections we have advanced against attaching importance to the blood-sugar apply similarly to the urine sugar It has, however, two points in its favour Glycosuria indicates a waste of sugar in the urine and as such it should be stopped Appearance of glycosuria in a patient previously sugar free indicates that that patient may possibly, but not probably, be entering on an exacerbation of his disease

And now with regard to ketonuria We have two tests at our disposal for detecting this condition, the ferric chloride reaction and the nitroprusside reaction It is worth remembering that the former detects ketone bodies in concentrations of 1 in 1400, whilst the latter detects concentrations up to 1 in 200,000 A rough idea of the degree of ketonuria can thus easily be gained

The association of diabetic coma and ketonuria is established beyond all reasonable doubt The increase of ketone bodies in the urine heralds its approach, their presence in quantity characterises its presence, their diminution presages its recovery The non comatose patient always feels and looks ill if he has much ketonuria If the diabetic is feeling relatively well yet ketone bodies are appearing in the urine in increasing amounts, then that patient invariably becomes ill Even if ketonuria persists in small amounts the patient never feels as well as he might Lastly, if ketonuria is abolished by appropriate treatment the patient's condition always improves, no matter what the height of the blood-sugar or the degree of glycosuria It appears, therefore that the test for ketonuria satisfies our two criteria of the ideal sign

One final comparison of the three tests may be instructive If a moderately severe diabetic is starved his blood-sugar can be reduced to normal and his urine rendered sugar free Is that patient clinically relatively healthy ? He most emphatically is not, and the presence of ketone bodies in his urine will support this decision

We may conclude therefore that of the three tests of disturbed metabolic function in a proved case of diabetes the information yielded by a knowledge of the blood-sugar is for practical purposes negligible, the little information that it is capable of giving being more easily obtained by testing the urine for sugar, but that a knowledge of the degree of ketonuria gives the most accurate idea of the clinical condition of the patient and the course which the disease will take The necessary treatment is thus clearly indicated *Abolish every trace of ketonuria so as to remove the patient from the essential dangers of his disease* Next at your leisure, attempt to stop the waste of sugar in the urine, but if this is impossible without exposing the patient to the danger of hypoglycæmic attacks do not worry, he may pass sugar for the whole 24 hours without coming to any harm if his urine remains consistently ketone free

When our tests for deranged metabolism indicate that the disease processes are approaching adjustment, we enter on the third stage of treatment The immediate dangers of diabetes are now behind us and we are faced with the problem of restoring to the patient that feeling of normal health to which he was accustomed prior to his illness The restoration of this feeling does not automatically follow the disappearance of the chemical signs of diabetes mellitus This point is insufficiently realised It is far too commonly assumed that, because no chemical tests indicating abnormality can be obtained from a particular patient, then that patient must be well despite his protests to the contrary If a patient with uncomplicated diabetes does not experience a normal sense of health, then the treatment of that patient is at fault, however perfect the chemical findings.

The commonest cause of a feeling of impaired health in a patient with no chemical signs to justify its presence is the inappropriate nature of the diet. In my experience the fault is always the same: the diet contains too little carbohydrate and too much fat In an endeavour either to keep the blood-sugar normal or the urine sugar-free, the carbohydrate is cut down and the calorie requirement made up with fat. If this method succeeds the patient is as badly off as he would have been in the pre-insulin era, if it does not succeed he is usually worse off, for in addition to supporting his ill-health he has to receive injections of insulin In these latter cases, nine times out of ten, insulin is given until the abnormal signs disappear and no attempt is made to take full advantage of the insulin by giving a more reasonable diet The result is that although the patient is prevented from lapsing into coma, he exists in a state of chronic ill-health No patient with diabetes can feel well on such an abnormal diet or experience the full benefits of insulin action. To achieve a good clinical result an adequate amount of carbohydrate must be given and I advise that the diabetic's diet contain about twice as much carbohydrate as it does fat. If an old-standing diabetic is changed to such a diet it is not long before his increased sense of physical well-being testifies to the beneficial results of such treatment.

INDIGESTION

(DR A. E CLARK-KENNEDY)

As is the case in many common conditions, we know little about indigestion Even the name appears to be to some extent a misnomer actual failure to digest the food is rare except in acute diseases and infants. The symptoms of chronic dyspepsia in adults, to which I propose to confine my lecture, are largely due to disordered mechanics of the gut Pain is due to spasm, flatulence to air-swallowing, and fullness to lack of gastric tone But the patient thinks of indigestion as chemical and may starve himself by over-dieting and become anæmic

When a patient complains of indigestion the first thing is to decide whether the symptoms originate in the stomach and duodenum or in the colon. Apart from recurrent subacute appendicitis, the small intestine rarely gives rise to chronic trouble. Gastro-duodenal symptoms are related to meals. Nausea, vomiting, and air-swallowing are common Pain is high in the abdomen and constant in position. Colonic disorders are associated with constipation and less frequently with diarrhœa The pain travels round the abdomen, but may be felt under the left costal margin; and on account of the gastro-colic reflex may occur particularly after meals This makes the diagnosis difficult, and many cases labelled gastric ulcer are really suffering from spastic colon.

Having localised the disorder of function the next step is to decide its pathogenesis A simple differentiation of cases into functional and organic is inadequate. All symptoms are due to of function, and disorder of function may, in ge terms, be due to four causes: poor physiology, anxiety state of the mind, hysteria, or organic dis The all-important differential diagnosis between th four causes depends on careful history physical examination and X rays, except by the grosser forms of organic disease, help In physiological dyspepsia the history is a long and the patient has often learned that certain upset him. It may be due to over-eating or have precipitated by loss of teeth. Many cause complicated by a nervous element, because patient with a weak digestion becomes over an about his symptoms Other cases of n dyspepsia (anxiety neurosis with gastric are due to fear of gastric ulcer, appendici malignant disease—often started after some gastric upset by the unguarded remark of a d a wrong diagnosis, or the suggestion of a In such people the sympathetic is over-active G secretion and tone are therefore inhibited, with result that when food is eaten, indigestion The history is usually a long one and the sym fluctuate and vary without definite habits related only to the emotional condition of individual Nothing particular is found on tion, but the tongue is usually dirty and the ab wall flabby and the abdomen generally tender anxiety neurosis the symptoms are due to emotion on the sympathetic, and serve no useful purpose hysteria however the symptoms serve the patient pose who wants to be ill, and are effected th skeleto-motor nervous system Apart from therefore, and possibly some cases of hysterical, hysteria is not a cause of indigestion. Patient organic disease do not usually develop anxiety with the production of neurotic symptoms, when this does occur you are apt to miss the condition. Except in these difficult cases, history is of a definite kind and the symptoms definite habits and occur at definite times history is either short, or, if long, periodic, related in an unemotional way. Examination patient will help you in a few cases, and it is important to pay particular attention to the as some cases of phthisis present dyspeptic An X ray may help you, but a negative X not exclude organic disease of the stomach.

You must all be familiar with the case with a atypical history of ulcer but which from the m of the individual you regard confidently as a organic disease Many of these have actual hæmatemesis and yet the X ray is negative do not improve if their appendices are remove do they often improve after dental treatment. explanation probably lies in recognition of g as a clinical condition With advancing repeated trauma, mechanical, thermal, and ch the stomach becomes prone to develop Chronic gastritis has now been demonstrated logically, and during life by special radiol methods, and by gastroscopy. Dr. Hurst gastritis, either local or general, to be the und cause of most gastric disorders. A patient who a patch of inflammation in the stomach is for a gastric ulcer and the symptoms will like chronic ulcer. A patient with a rapidly ing hypertonic stomach and high secretion who develops a patch of inflammation in the du is similarly heading for a duodenal ulcer gastritis leads to progressive reduction in ecretion, and to symptoms not unlike those of arcinoma of the stomach But in all these cases rdinary X rays will show little or nothing

The treatment of physiological dyspepsia is to see hat the patient avoids articles of diet found to pset him, to eradicate bad habits in eating and o supply teeth if these are lacking The treatment a dyspepsia born of an anxiety neurosis is in the rst place to avoid such diagnoses as ulcer chronic ppendicitis, and visceroptosis Gastric ulcer is agnosed too readily The appendix is still removed uch too frequently in people whose dyspepsia is tirely nervous Visceroptosis, a doubtful cause symptoms at any time, is a diagnosis from which w patients have ever recovered Wholesale dental traction is advised much too lightly The next ing is to reassure the patient by careful examination rsuasion, and an X ray, if necessary, that no uctural lesion is present It must be explained that tulence is due to air-swallowing and not to gas med internally Self treatment, particularly over ting and the taking of patent medicines, must be pped These patients have poor gastric tone icient secretion of acid, and over secretion of icus A dry diet is therefore indicated Sodium arbonate before meals will dissolve mucus and minates gastric secretion Lastly as these patients highly introspective, extroversion should be encouraged, and for that there is nothing like some hobby or manual occupation These patients require discipline rather than psycho analysis On the other hand patients with early organic disease, incipient gastric or duodenal ulcers, or generalised gastritis want frightening The former will swallow medicine for a week or two but when their pain disappears they take no further precautions and no more medicine until the next attack I am sure that such patients should be frightened into realising that they are heading straight for ulcer and that they should exercise reasonable dietetic restriction and take alkalis between meals for at least six months or a year after all symptoms have disappeared In this way chronic ulcers may be prevented But you must not frighten the patient with nervous dyspepsia in this way—hence the importance of accurate diagnosis Hurst regards chronic gastritis as a precancerous condition, and the treatment of chronic gastritis with achlorhydria as unsatisfactory Only a few do well on acid, the majority do better on sodium bicarbonate before meals

In conclusion let me remind you again that any disorder of function may be due to poor physiology, an anxiety state of the mind, hysteria, organic disease, or have no real existence and only be a delusion in the patient's mind Success in treatment depends on accuracy in diagnosis

SPECIAL ARTICLES

PARIS

(FROM OUR OWN CORRESPONDENT)

DICAL ASPECTS OF THE MARSEILLES ASSASSINATIONS

ur gunshot wounds from which King Alexander l were evidently such as to prove rapidly fatal it seems that Louis Barthou s life might have saved had he received skilled treatment in a onably short time *Excelsior* bluntly says that arthou's injured arm had been ligatured at once need not have died Though the assassin s let had fractured a bone in the arm and wounded main artery, Barthou was able himself to open loor of the motor-car in which he had been shot to walk to the Bourse where he found a taxi h took him to hospital Here the interne at put a ligature on the arm above the elbow and surgeons arrived, Barthou was taken to the ating theatre and anaesthetised The wound cleaned and the fracture set On beginning to ver consciousness, he was so weak that blood fusion was undertaken, but death occurred 45 P M *Excelsior* expresses amazement over the that it took 20 minutes to transport Barthou the scene of the shooting (at 4 10 P M) to the ital and that owing to the absence of any gency ambulance service, yet another 20 minutes to pass before he was given first aid This ice of medical preparedness at Marseilles is ented on with much disgust in Paris where a ipal councillor Mr Armand Massard has the Prefect of the Seine and the Prefect of if it would not be possible to assure the presence medical service at all official meetings at which s of distinction are present

ELL-TO DO PATIENTS IN PUBLIC HOSPITALS

well to do patient (whether out patient or ient) in a public hospital raises one or other of questions If he pays nothing he accepts s destined exclusively for the poor from whom he is in a sense stealing And if he pays little or much he is impaling the public hospital on the horns of a forensic dilemma, for it is illegal for such an institution to develop any commercial activity Pressure has been put on the hospital authorities to induce them to discourage the well do do in their patronage of the public hospitals in this sense, and the director general of the *Assistance Publique de Paris* has recently addressed to the Parisian public hospitals a memorandum in which he points out that thanks to the constant improvement in the public hospital services, well to do persons have taken advantage of them in spite of being able to employ private practitioners and clinics Accordingly certain employees of the public hospitals must henceforth investigate the financial status of patients who may conceivably be well to do Such persons will be asked to sign a statement and to produce documentary evidence of their eligibility to receive free treatment There are, however five groups of cases to remain exempt from the effects of these instructions They are (1) urgent cases, duly certified as such by a doctor, (2) cases raising public health problems (venereal disease or tuberculosis), (3) street and occupational casualties, (4) the subjects of national health insurance, and (5) war pensioners The public hospital which finds itself the embarrassed host of a patient who has secured admission to it by an elliptical approach is to notify the head of the *Assistance Publique* who will dispense the *sanctions convenables*

INTRAVENOUS METHYLENE BLUE IN LEPROSY

On Oct 2nd a report was presented by Dr Marchoux to the French Academy of Medicine on the treatment of leprosy on behalf of Dr Montel of Saigon Since November 1933 he has given intravenous injections of methylene blue to 172 patients suffering from leprosy Every form of leprosy was included in this group In early cases continuous improvement was observed sleep and appetite returning and the ulcers healing In cases of old standing the rapid improve ment observed at the outset was followed by a stage of relative stagnation from which most of the patients had not yet emerged, although some degree of progress was still being made. Dr Montel is of the opinion that no other treatment has hitherto been able to effect such rapid improvement; he finds the action of methylene-blue at least three times as rapid as that of chaulmoogra oil and its derivatives, over which it has the advantage of being effective in all forms of disease But the best results would seem to be obtained by a combination of methylene-blue with chaulmoogra oil treatment From the public health point of view it is interesting to note that open contagious forms of the disease can be rapidly changed into closed non-contagious forms by this treatment Though its mode of action is still imperfectly understood, it seems that methylene-blue has an elective affinity for leprous tissues—a condition not without its inconveniences, for the blue colour of the leprous lesions is distressing to patients anxious to hide their condition. The selective discoloration, however, vanishes some six weeks after the last injection.

CANCER OF THE CERVIX

The anti-cancer centre of Marseilles, established in 1927, has functioned regularly since the beginning of 1928 Prof Léon Imbert has recently[1] analysed the results of radiological treatment, according to Regaud's technique, given to 252 cases of cancer of the cervix during the years 1928–31 Of the 102 cases dating at least five years back, only 12 could be claimed as cures It should however be noted that every patient coming to the centre was treated, and that 50 belonged to the fourth stage of the disease. There were indeed no patients in the first stage. Seven of the 17 patients in the second stage (41 per cent.) and five of the 35 patients in the third stage (14 per cent.) could be considered cured, as judged by the five-year test There were no survivors among the 50 fourth-stage patients Between 1928 and 1933 inclusive, the proportion of early cases, in the first and second stages of the disease, had risen from 11 to 48 per cent —one of the most encouraging features of Prof. Imbert's report.

AUSTRALASIA

(FROM OUR OWN CORRESPONDENT)

CATGUT AND TETANUS

IN Australia it has been the practice for most hospitals and many private surgeons to buy raw catgut and prepare it themselves, by the biniodide method. This method was used almost exclusively for many years, post-operative infection was uncommon and post-operative tetanus was rarely reported The first suspicion that all was not well with this means of sterilisation, which for years appeared to have given satisfactory results, was the publication of the Medical Research Council's investigation by Bulloch, Lampitt, and Bushill Even after this many surgeons maintained that the clinical results had been so uniformly good that they scarcely felt disposed to make a change A series of deaths from post-operative tetanus has, however, necessitated further review of the situation, and the biniodide method has been almost generally replaced in New South Wales by the iodine method Still there are a number of surgeons who strongly oppose this change claiming that there are many grave disadvantages in the use of iodine and that the case against catgut as a cause of tetanus, or the biniodide method, is not proven.

The main disadvantages of the iodine method said to be that it makes the gut slippery; that seriously interferes with its physical properti including its tensile strength, that it tends to prev its absorption; and that the iodine in the t acts as an irritant, causing the formation of and infection in wounds. One of the main emphasised in the method of preparation, as outli in the Medical Research Council report, is that glycerin makes the catgut so slippery that li cannot be tied with safety and that ligatures sutures are liable to come undone, thus reactionary hæmorrhage and post-operative he There can be no doubt that as regards gut prep in Australia by this method there is some subst in these objections

The New South Wales Branch of the British Me Association in a letter to the *Medical Journ Australia* (August 4th, 1934, p. 172) gives a by its section of surgery in which it is held t proved, from the work of Bulloch, Cooper, W and others, that *spirituous biniodide is ineffe* as a sterilising agent; the section believes that method advocated by Bulloch, Lampitt, and and the modifications of it employed at the Prince Alfred and the Sydney Hospitals and at Royal Infirmary, Edinburgh (published in *Edinburgh Medical Journal*, April, 1934, by T Mackie), is safe. The modifications of the i method by the Sydney and Royal Prince Al Hospitals have been made with a view to the tion of the disadvantages mentioned above both the modifications the iodine solution is same as that recommended in the Medical R Council report, except that at the Prince A Hospital no glycerin is used in the solution, any stage of the sterilisation; further, after ten in the iodine solution, the gut is placed in changes of 1 in 250 biniodide in rectified spirit then stored in this solution In the Sydney Hos method, 5 per cent glycerin is used in the io solution instead of 10 per cent as recommended in Medical Research Council report; the gut is placed in a decolorising solution of 85 per cent al and 5 per cent glycerin, and after repeated ch of this solution it is stored in rectified spirit letter from the British Medical Association with a full quotation of the Therapeutic Su Act of Great Britain.

The editor of the *Medical Journal of Au* devotes several pages to an instructive leading on the subject, in which it is revealed that cases of post-operative tetanus have been investi in New South Wales since 1930 These occ at seven different hospitals; the same bra catgut had been used in the first five cases, but whole series five different brands had been used has previously been noted, in every case the oper had been undertaken for the relief of an abdo condition, and in seven of the nine the bin method of preparation had been used In only case was the tetanus bacillus recovered from tissues. In this article reference is made to a shortly to be published in the October issue of *Australian and New Zealand Journal of S* by Dr C. H Kellaway and Miss F. Eleanor Wil who isolated tetanus bacilli from catgut which been used in operations followed by tetanus found that on injection some of these orga gave rise to tetanus in animals. They state hough it is usual for the washed spores to fail to use symptoms when injected into animals, cultures ntaining toxin generally give rise to experimental tanus, and they suggest that the presence of a ntaminating anaerobe may have caused destruction toxin in their investigations and may have counted for the low mortality among their laboratory nimals They suggest that this contamination ay also contribute to the low post-operative cidence of tetanus in man despite the use for so any years of catgut prepared by methods inefficient r sterilisation

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[1] Presse méd., Oct 10th, 1934, p 1580.

The ways of the tetanus bacillus are indeed strange e toxin adds a factor whose part is so difficult determine that it seems that even if the catgut ed in every surgical operation were made free om tetanus bacilli or spores, post operative tetanus ould probably not be entirely eliminated

THE LONDON MEDICAL EXHIBITION

This exhibition opened in the Royal Horti- ltural Society's Hall on Oct 15th, and will remain en until Friday, Oct 19th The number of stands s greater than ever, 167 in all, and the first day owed a record attendance Exhibitors were very ased, and any suggestion that the exhibition was ribund is now firmly discredited For the first e it is open in the morning, from 11 A M, thus ording an opportunity to those whose afternoons occupied Quite a number of new preparations d improved formulas were shown and the old ends of the profession were well represented

Drugs and Pharmaceutical Preparations

00) ALLEN AND HANBURYS, LTD (Bethnal Green,), had a wide range of preparations, notably Fer lic, chocolate-flavoured ferrous phosphate con- ning 1 75 per cent of iron (Fe) in the ferrous te, Hepol, sterilised solution of liver extract for enteral injection, each c cm containing the anti- emic principles of 20 g of fresh liver, Lugastrol, esiccated gastric substance for pernicious anæmia, 1 Sclerosol S M, a solution of sodium morrhuate varicose veins which keeps and does not congeal ordinary temperatures —(61) THE ANGIER CHEMI- CO, LTD (86, Clerkenwell-road, E C), besides ir familiar emulsion of petroleum and hypo- sphites, presented Sagradol, a laxative compound mineral oil and aromatised cascara *sagrada*, with- any phenolphthalein or sugar —(10) ANGLO- FRICAN PHARMACEUTICAL CO, LTD (59 Dingwall- d, Croydon), showed a range of preparations, ably Huxley's Surgical Powder, a zinc oleo- rate associated with refined starch, boric acid, mol, and methyl salicylate, for weeping *surfaces*, icaria, intertrigos, and bedsores, Syr Glycer- sph Comp Huxley, a well tried tonic prepara- without alcohol, saccharin, or sugar; *Sal* isepticus Huxley, a granular powder for dis rking mucous surfaces, and *Dermafoam* for ning the hands and keeping the skin supple — 1) THE ANGLO FRENCH DRUG CO, LTD (11 and Guilford street, W C), showed their prepara- s, drawing special attention to Anaquintine in a counting instillator for rhino pharyngeal therapy, oestryl, their pure crystalline ovarian *follicular* none in ampoules of 1 c cm, representing) 1 units, for injection, and also in solution and ets; Vagotonine, a hormone *recently isolated* the pancreas which increases parasympathetic , and Orkitone, a palatable elixir of interstitial act possessing tonic properties —(7) ARMOUR COMPANY, LTD (Armour House St Martin's-le- nd, E C), among their many 'Glanoid' glandular acts, pointed out Pankitol tablets for high blood ssure, a compound of pancreas and thyroid, and their new standardised ovarian preparation each *dose containing 25 Allen-Doisy rat units* —(44) BAYER PRODUCTS, LTD (Africa House, Kingsway, W C), had two new products to show Devegan, an arsenical preparation for the treatment of leucorrhœa put up in tablets to be inserted well into the vagina where they are entirely used up, and are said to reinstate the normal flora, the other was Bioferrin a nutrient tonic based on hæmoglobin, iron, and liver extract, they also showed their range of well known products including Prominal, recently introduced for the treatment of epilepsy, having a less hypnotic action than luminal —(35) JOHN BELL, HILLS AND LUCAS LTD (Oxford Works, Tower Bridge road S E), had a range of medicinal specialties including Danium ointment prepared from titanium salts and recommended for eczema and other chronic skin infections, Ephedrin Nasal Solution, halibut oil and malt with colloidal iron, and a range of colloidal lotions —(6) BENGUE AND CO, LTD (24, Fitzroy-street, W 1) had many of their familiar products on view, and pointed out a new preparation of ovarian hormone and thyroxin, each dose equivalent to 2½ mouse units Basedowyl; also Arhemapectyl, a blood coagulant, soluble pectin combined with colloidal calcium, for the prevention and control of hæmorrhage, Anaclasine, an anti anaphylactic for oral use, Opocalcium a mixture of the principal mineral salts and endocrine extracts for various conditions of debility and tuberculosis, and Passiorine, a fluid extract of passiflora extract of *Salix alba* and alcoholic tincture of *Cratægus oxyacantha*, which acts as a circulatory and nerve sedative —(87) BISODOL, LTD, and ANADIN, LTD (12, Chenies street, W C), showed their well known anti acid digestant and sedative

(37) BOOTS PURE DRUG CO, LTD (Nottingham), had their extensive range of preparations, and particularly emphasised Livron, a compound liver extract with iron, yeast, and malt, Hepastab, a concentrated sterile solution of the anti anæmic factor of mammalian liver prepared for intramuscular injection and tested clinically before issue They have reissued their Pepsac desiccated stomach substance in a de-fatted form which is much easier to take than the original preparation —(140) BRITISH DRUG HOUSES, LTD (Graham-street, City road, N) in addition to their vitamin preparations—Radiostol (D), Radiostoleum (A and D), and Radio Malt (A, B, and D)—showed a new vitamin C preparation, Glycine B D H (amino acetic acid), for progressive muscular dystrophy, Tannaflavine a powder which when made up with water yields a 20 per cent solution of tannic acid, with 1/1000 acriflavine, and their crystalline follicular hormone Œstroform, exhibited as an oily solution and in tablet form, possessing respectively 1,000 and 10,000 international units of activity per c cm and 1000 units per tablet —(111) BURROUGHS, WELLCOME AND CO (Snow hill Buildings, E C), displayed among their products Wellcome Brand insulin, Tannafax non oily, non greasy jelly for the treatment of burns by tannic acid, a range of serological and photographic products and medicine chests and cases, vitamin products, including Kepler brand cod liver oil and malt, and vitamin D as tabloid Calciferol and also Ergotoxine Ethanesulphonate in tabloids, hypodermic tabloids and as Ernutin

(1) G W CARNRICK CO (*Brooks and Warburton* Ltd, 232 Vauxhall Bridge-road, S W) in addition to Hormotone had on show Incretone, their liquid endocrine tonic, and Thelestrin, a standardised follicular hormone supplied in ampoules containing 25 to 50 Allen Doisy rat units for hypodermic administration —(105) THOS CHRISTY AND CO LTD (4/12, Old Swan lane E C) distributors of Glyco-Thymoline, showed Gorun ampoules and cachets for sciatica lumbago and many forms of arthritis, Ergaspiol (Smith) indicated in the treatment of amenorrhœa dysmenorrhœa and other menstrual disorders; Musterole brand magnesia oil, [illegible] facin antiseptic, antiphlogistic, and rubefacient [illegible]

ing, for the treatment of all inflammatory conditions; Tussipect, an expectorant made from primula root and containing its ammonium salt as the active principle; and Pandigal, a stable preparation of *Digitalis lanata*, which is practically non-cumulative in action.—(13, 14) COATES AND COOPER, LTD (94, Clerkenwell-road, E C. 1), representing TEMMLER CHEMICAL WORKS, Berlin; N/V DISPERT, Holland, THE BATTLE CREEK FOOD CO, Michigan, U S A; A/S SERPENS, Copenhagen, THE BIO-CHEMICAL LABORATORIES, LTD., Locarno; GOMENOL LABORATORIES, Paris; DESITIN WORKS; AMERICAN APOTHECARIES CO, CHEMICAL WORKS H MACK, NACHF., particularly pointed out their new products Forapin, bee-venom salve for the treatment of rheumatic diseases and allied conditions, Sciatago, a treatment for rheumatic diseases based on the idea that they owe their origin to a deranged metabolism; the Dispert preparations containing the active principle of the products concerned prepared by a special desiccation process; Disulphamin for infectious diseases; and Desitin ointment, a stable cod-liver oil unguent for wounds and burns —(3) CONTINENTAL LABORATORIES, LTD. (30, Marsham-street, S W.1), besides their well-known Taxol, showed Antipeol, a vaccine filtrate containing the antivirus corresponding to staphylococcus, streptococcus, and pyocyaneus, for arresting microbic infection in wounds, and Crinex, a non-albuminous total ovarian extract for oral administration —(117, 118, 138) CROOKES' COLLOSOLS (Park Royal, N W. 10) emphasised again the value of their halibut oil as 30 per cent. stronger than any other on the market and entirely British, and introduced Halycitrol, each tablespoonful of which contains the equivalent of a teaspoonful of cod-liver oil, a teaspoonful of fresh orange juice, and also glucose. Another new preparation is Lacto-Kaolin, wherein the constipating effect of the kaolin is neutralised by lactose; and mercuric sulphide, a truly colloidal preparation, for intramuscular or intravenous treatment of venereal conditions They also showed Ferrofax, an iron, yeast, copper, manganese and cobalt preparation, and noted that their Dekrysil is now in Part I of the Poison Schedule This firm is also introducing the new Colloseal cap for elegant dispensing—an attachment to a medicine bottle which gives an even pour and no runback.

(97) J. C ENO, LTD. (Pomeroy-street, S E), showed their popular fruit salt —(149, 150, 160) EVANS, SONS, LESCHER AND WEBB, LTD. (56, Hanover-street, Liverpool), had a large display of chemicals and preparations, and pointed out Carditone, a watery solution of 15 per cent sodium camphosulphonate, which can be administered intravenously as well as by the mouth; Eubion, a vitamin A concentrate made up in chocolate-covered tablets each equivalent to a tablespoonful of cod-liver oil; and common cold vaccines prepared from local strains, as the firm finds that colds vary somewhat from district to district, although the precise difference cannot be labelled —(70) FASSETT AND JOHNSON, LTD (86, Clerkenwell-road, E C), pointed out on their stand Ovoferrin, a fluid iron colloid which has a general tonic and stomachic action, Lingford's Liver Salt, a saline aperient containing calcium iodide; and Argyrol brand Silver Vitellin, which has a sedative and inflammation-allaying action — (11) GENATOSAN, LTD. (Loughborough), showed their popular products, and ordinary and local immunity vaccines, drawing special attention to Calcium aspirin (Coplans) which is claimed to have the advantages of aspirin without its disadvantages They will shortly be introducing the Fissan Idea, an improved method of preparing medicaments for cutaneous application —(95, 96, 109) GLAXO LABORATORIES (56, Osnaburgh-street, N.W) drew attention to Syrup Minadex, a modern adaptation of Syrup Ferri Phosphatis Co and cod-liver oil, combining their active principles with "trace" metals, and Adexolin liquid and capsules, a preparation of vitamins A and D, each capsule being equivalent to 10 g. of cod-liver oil —(121) C. J. HEWLETT AND SON, I (35/42, Charlotte-street, E C.), among their pharmaceutical preparations, selected for men two new tablets · Tablets pro Adiposis and Tab co Cerevisæ; their antiseptic cream, their C Formalin Co. mouth wash and gargle, Ho aperient and cholagogue, and Hormonigen, a p glandular tablet —(86) HOUGH, HOSEASON AND C LTD (2, Bridge-street, Manchester), had a range of mixtures, and pointed out especially T Arthritone, for rheumatic conditions; Tablets C don Co, a cholagogue and urinary antiseptic, T Lignaseptone, introducing carbonised Sphagn colloidal iodine and alumina as an intestinal septic and depurefacting agent; and Nalgo, an septic and analgesic —(71) HOFFMAN-LA CHEMICAL WORKS, LTD (51, Bowes-road, N addition to their well-known range of sedatives and hypnotics, drew attention to a treatment for rheumatism by histamine; Re their stimulating, non-constipating general t Saridone, a combination of analgesics and pyretics for the relief of painful conditions; and two new preparations · Redoxin, a synthetic min C, and Larostidin, a preparation for the ment of peptic ulcer by injection.—(45) H AND SONS, LTD (Ilford), showed their and preparations, notably Quinisan, the new salt which is said to have an extremely rapid in colds and influenza; Agotan, a prep uric acid conditions, corresponding to the cinchophen, and the Standard Ether for anast which is now made from duty-paid pure spirit at the same price as was formerly charg ether made from methylated spirit —(63) Jo AND SONS (Hendon, N.W.) showed their silve egg yolk preparation Arvitin, which is standa to contain 20 per cent of metallic silver in co form; and their Estersil, a mixture of eth propyl esters of salicyl glycollic acid, re for rheumatic affections —(166) KAYLENE (Waterloo-road, N.W.), demonstrated their known product and its modifications, notably C kaylene, a preparation combining the de action of Kaylene with the flatulence properties of vegetable charcoal; and K saline, an effervescing digestive mixture.

(139) LEVER BROS, LTD. (Port Sunlight), sh two vitamin products, Essogen, containing vita biologically standardised and free from with a blue value of 2000, packed in 2 m cap and Advita, vitamins A and D together, also gically standardised and packed in 2 m. balanced at 1250 blue value for A and 1000 per g. for D —(122) WM. MARTINDALE (12, Cavendish-street, W.) had a wide range of tions on display, especially ether-soluble tar for eczema and other skin affections, contai special fraction of distilled coal tar, zinc oxid starch; Methyl Aspriodone liniment and bal rheumatic pain; and peptone sterules —(99) AND BAKER, LTD (Dagenham, London), amidst numerous preparations drew attention to Sor which is an extension of the action of Soneryl, b in addition amidopyrin, and is a strong and hypnotic; Myocrisin, a gold preparation f intramuscular treatment of arthritis and culosis, Aplexil, a vaccine for influenza, Urazine, a combination of piperazine, citric ac salicylic acid, for rheumatic conditions —(148) AND JAMES, LTD (64, Hatton-garden, E C), with their familiar Iodex and Neuro Pho (Eskay Brand), had on show Pentnucleot mixture of the sodium salts of pentose nu for agranulocytic angina, and also when le occurs in infections which are usually ac by leucocytosis; and Pyridium, their septic which acts in either an acid or an medium —(103) H. R NAPP, LTD. (3 and 4, Cle Inn, W C), picked out from their range of tions Hepamult, a preparation which gives th

8 oz of fresh liver at a cost of 6d, and Oleo-nocrysin, an intramuscular preparation produced meet the demand for a gold product in cases where travenous injection is difficult or impossible —20) OPPENHEIMER, SON AND CO, LTD (Handforth boratories, Clapham-road, S W), among their rious preparations pointed out Alphidine a non-sic, non-irritant form of iodine which is readily similated, Alphidine combined with guaiacol in latinoid form for rheumatism and arthritis, aglactis a very fine permanent suspension of magsium hydrate, and Roboleine, their reconstructive hic food They also demonstrated their aeriser, hich reduces all oily liquids to almost invisible oke —(73) OXO, LTD (Thames House Queen-ect-place, E C), showed their numerous glandular eparations, notably Liveroid, a special liver juice anaemia, and the Oxoid liver extract for injection en immediate response is required —(64) PARKE, VIS AND CO (W), on a stand filled with various g preparations, pointed out their alum precipitated htheria toxoid, the effectiveness of which lies in fact that the antigen is absorbed only very dually so that the immunising properties are nifested over a long period, Hebaral sodium, a biturate producing refreshing sleep with a wide rgin of safety between therapeutic and toxic es, liquid Mycosal for mycotic infections of the , and Irradex, a preparation of manganese iron, vitamins A, B, and D in a palatable and diascally active malt vehicle —(75) PETROLAGAR BORATORIES, LTD (Braydon road, N), besides r well-known emulsion of mineral oil and Neoinine tonic food, had a display of Endrine their al compound for colds and hay fever, and ctoids, a new hæmorrhoidal suppository which bines the qualities of zinc oxide and boric acid convenient torpedo shape —(135) REED AND NRICK (CANADA), LTD (Distributors Coates and per, Ltd, 94, Clerkenwell road, E C) had on a wide range of single and multiple gland pro ts, notably Pancrobilin, a compound of bile pancreas for the treatment of constipation, Tonicine, a male or female gonadal tonic bined with strychnine and glycerophos tes —(58) RESEARCH PRODUCTS LTD (12 13 rietta street, W C), in addition to hormone and min preparations, showed a range of medicinal ucts for external application embodying the lodynic principle of surface tension and capillary ity—e g, Jelopar nasal jelly, Lodynic nasal y and douche, and Gonopar silver jelly 17) SANDOZ PRODUCTS (134, Wigmore street W) their familiar range of products, and especially ted out Calcium Sandoz syrup containing 60 gr alcium Sandoz to the tablespoon in a form free all hexoses Their newest product was Digi), a preparation of digitalis which they claim great advantages over all previous forms —28) SAVORY AND MOORE, LTD (143 New Bond-t, W), among their many medicinal prepara, drew special attention to Medilax a vegetable ure for constipation made up as silver coated ls; Nembutal (Abbot) a hypnotic for use when hypnotic and long sedative action is desired the Fructoles series of preparations offering valuable medicaments in perfect solution and able form —(17) SCHERING, LTD (188-192 High orn, W C), pointed out the latest preparation of non - Progynon B Oleosum available in the of dragees and also intramuscular injections in ntrates of 10,000 and 50,000 mouse units, nal B Oleosum for intramuscular injection; opin, a bactericide, urinary antiseptic and al internal disinfectant by the oral route; and ir well known products including their analgesic hypnotic Veramon and Medinal —(2) SCOTT BOWNE, LTD (10, Stonecutter street E C) rs of the well known Scott's Emulsion of codoil introduced Halivite the latest preparation ibut liver oil, and particularly drew attention to their patent pill, a cheerful yellow spherule containing two drops of the oil, biologically standardised to exhibit a vitamin A and D potency approximating to the natural balance found in cod liver oil —(101) SHARP AND DOHME, LTD (232 Regent street, W), showed their Solution S T 37, a stable non irritating germicide prepared as a solution pastilles and paste their tonic and sedative preparations Glycerophosphates Comp, and Somnos Mulford, and their serobacterins a sensitised vaccine containing the antibody antigen combination, for treatment and prophylaxis, also alum-precipitated diphtheria toxoid (Mulford) the single dose treatment for diphtheria prophylaxis —(153) TONICITY LABORATORIES, LTD (26, Great Ormond-street W C) demonstrated their Halmagon tablets, which contain the halogen compounds of magnesium, and are suggested for conditions of magnesium deficiency lowered vitality, prostatic enlargement and many others —(33, 34) WILLIAM R WARNER AND CO LTD (300, Gray's Inn road, W C), showed their familiar range of products, including Agarol, an emulsion of mineral oil with phenolphthalein, glycerine and agar agar, Anusol hæmorrhoidal suppositories, and particularly stressed their Veganin analgesic and sedative tablets containing aspirin, phenacetin and codeine, and recommended for painful conditions, fever, and influenza

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THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg Vice Adml Robert W B Hall, C B, O B E, on Oct 3rd was received by the King upon his appointment as Medical Director General of the Navy He was granted the rank of Surg Vice Admiral on July 2nd last, when he took up his duties as Director General

Surg Comdrs R F Rampling to *Delhi* on recomming and as Squadron M O (on transfer of flag), and J A Maxwell to *Pembroke*, for R N Hospl, Chatham, temp

Surg Lt Comdr M Barton to *Pembroke*, for R N Hospl, Chatham, temp

Surg Lts B S Lewis to *Alecto*, and J M McNamara to *Duncan*

ROYAL NAVAL VOLUNTEER RESERVE

Surg Sub Lt C M Lamont promoted to Surg Lt

ROYAL ARMY MEDICAL CORPS

Lt (on prob) A J Clyne is confirmed in his rank.

Short Serv Comms —Lt (on prob) M J Horgan resigns his commn

The undermentioned Lts (on prob) are confirmed in their rank, in the following order of seniority: R H Foster, A G D Whyte, J Boyle A L Pennefather, J S Riddell, F E Buckland, D F Swift, R A Stephens, J H J Crosse, E H P Lassen, I Buchanan and W T Bermingham

TERRITORIAL ARMY

Capt J W Hirst to be Maj, with seniority next below Maj A H Macklin, *O B E*, M C

Capts A Swindale and D L Kerr to be Majs

Capt & Bt Maj O G Misquith to be Maj

Lts J W Lobban B G Macgrath and G L O Riordan to be Capts

Lt A W Marsden to be Capt with seniority next below Capt J R Robertson

ROYAL AIR FORCE

Squadron Leader F N O Brien to Marine Aircraft Experimental Establishment, Felixstowe for duty as medical officer

Squadron Leader W F Wilson M C to No 2 Flying Training School Digby, for duty as Medical Officer

Squadron Leader H McW Daniel to Station Headquarters Hendon for duty as Medical Officer

Flight Lt J Magner to Station Headquarters Netheravon

Flying Offr L S Everett is promoted to the rank of Flight Lt

CORRESPONDENCE

L'UNION INTERNATIONALE CONTRE LE CANCER

To the Editor of THE LANCET

SIR,—Many of your readers will be aware that a preparatory conference took place in Paris last March which had for its purpose the formation of an international union, whose main objects will be to establish close liaison between organisations concerned in the study of cancer; to combat charlatanism; to propose criteria for a uniform system of international records; to publish occasional bulletins on matters of international importance; and to organise future international congresses. The preparatory conference, which was convened by Mr Justin Godart, former Minister of Health and president of the last International Cancer Congress in Madrid in 1933, was extremely well attended No less than 32 countries (20 European and 12 extra-European) were represented by one or more delegates The British delegation consisted of Lieut -Colonel A B. Smallman from the Ministry of Health, Mr. Richard Davis from the British Empire Cancer Campaign; Dr. W. Cramer from the Imperial Cancer Research Fund, Mr. Sampson Handley from the Middlesex Hospital, and Mr Cecil Rowntree from the Cancer Hospital

Agreement was reached upon certain general questions of principle, and statutes controlling the organisation of the union were adopted Of these, the ones relevant to the present purpose are:—

1 That each country shall be represented by two delegates, who will collectively constitute the governing body (*conseil de direction*) which will meet annually so far as possible in a different country each time

2 That the *conseil de direction* shall have power to add to its numbers up to one-third of its total membership, by election of associate members from any country.

3 That each country shall be asked to arrange for the nomination of these national delegates.

A temporary executive committee was appointed, consisting of. *France*, Mr. Justin Godart (president); *Germany*, Prof Max Borst, *Belgium*, Prof J Maisin; *Italy*, Prof A Lustig; *Spain*, Prof. del Rio Hortega; *United States*, Dr Carter Wood; and *Great Britain*, Mr. Cecil Rowntree. They are to conduct any necessary business until such time as the *conseil de direction* is in being. This temporary committee met in Paris in July, and provisionally arranged that the annual subscription of governments or cancer organisations desiring to join the Union Internationale shall be 1000 French francs.

Arrangements have been made for the preliminary work in connexion with the selection of British representatives for the *conseil de direction* to be undertaken by the British delegates to the preparatory conference held last March, and the object of this letter is to ask those organisations in Great Britain which were not represented at the preparatory conference, but which will no doubt desire to join the Union, to communicate with me or with one of my fellow delegates, so that a meeting may be called for the purpose of electing the two British representatives

I should add that the Ministry of Health and the Department of Health for Scotland are sympathetic towards the objects of the proposed Union.

I am, Sir, yours faithfully,

CECIL ROWNTREE.

9, Upper Brook-street, London, W 1, Oct. 15th.

TREATMENT OF RHEUMATOID ARTHRITIS WITH GOLD SALTS

To the Editor of THE LANCET

SIR,—Apropos of Dr Forestier's article in your issue of Sept 22nd, I beg to submit observations on two patients with rheumatoid arthritis treated with gold injections, under the care of Dr. Vincent Coates in the wards of the Royal Mineral Water Hospital, Bath I regret that the circumstances under which these two cases were treated did not permit of a larger series The conditions considered desirable were as follows:—

1 That each patient should already have been under observation in hospital with appropriate education for three months prior to gold injections This was thought to be essential seeing that every patient admitted to the wards of the hospital, with the possible exception of the hopelessly crippled, benefits considerably as a result of a correct régime, no matter what accessory treatme be given Three months was the period chosen sufficient to allow of stabilisation of metabolism and f education in the matter of joint régime

2 During the period of gold injections no treatme other than this was allowed; no massage or baths we given nor were drugs of any sort, except aperients T two patients were put under conditions which necessitat rest in bed for 18 out of the 24 hours and neither w allowed to walk, because of synovial enlargement of t weight-bearing joints, but a full *movement* (witho strain) of every joint was carried out daily. The di was the ordinary hospital diet

3 That the circumstances relating to the particular cas selected warranted submission to treatment of uncerta efficiency

Allochrysine was the gold salt selected, so that effects might be compared with those of Forestie whose statement, however, in respect of accesso treatment should be quoted "We do not consid that gold salts treatment should be given without t other treatments for arthritis, especially massa with active and passive movements; all kinds physiotherapy prove of great value as an aid the method Hydrotherapeutic treatment—sulph baths, douche massage, mud baths—has been use by 60 per cent of our patients and has certain helped to bring about a rapid imrovement of t functions" (THE LANCET, 1932, i., 444). T following are brief particulars of the cases:—

CASE 1—Female, aged 24 Onset of rheumato arthritis, October, 1930, with involvement of all join of extremities by Christmas of that year Standa treatment of the general condition as well as orthopæd measures resulted in a marked improvement and thou at the beginning of gold treatment movement of all join was full with the exception of slight limitation *of the* rig shoulder-joint and some weakness of grip, a mild degr of fusiform swelling persisted

CASE 2—Female, aged 23. Onset of rheumato arthritis, Christmas, 1931 At the beginning of go treatment both wrists were slightly fusiform with mark limitation of movement. The knees were mildly affect and the ankles somewhat swollen with limitation of mov*ment of the left ankle. There* was limited *movement* the jaw also

In addition to a careful clinical examination including inspection of the mouth for latent seps a urea-concentration test was carried out on bot patients to ensure that renal function was normal A suspension stability test of the erythrocytes wa performed and radiograms were taken of morbi articulations Each patient had three injection of 5 cg allochrysine at intervals of five days, then weekly injections of 10 cg, the whole course extending over three months The results may be summarised,

Case 1—Clinically the patient declared herself to be better, but the degree of improvement could not be assessed by ordinary clinical methods The sedimentation-rate, however, was definitely improved, the reading at the end of one hour being 50 per cent instead of 45 per cent Radiographically no change was discerned in the articulations

Case 2—Clinically there was improvement in the movement of the left ankle and the jaw and also an improvement in the grip but no other demonstrable change was present. The sedimentation rate showed exactly the same readings as before treatment and radiographically there was no visible change

It has been suggested that examination after an interval of two years might be required to show the time value of gold injections To concur in this the necessity of periodic review and abstinence from accessory treatment should be stipulated It might also be argued that contemporaneous observation of control cases of rheumatoid arthritis under the same conditions, treated by, say, injections of normal saline, would have further enhanced the value of conclusions reached. To this criticism it must be answered that improvement, if any, assignable to gold *treatment was conspicuous* by its absence Under almost ideal conditions of rest and hygiene, treatment of the two patients by injections of the gold salt allochrysine not only failed to produce dramatic betterment but any improvement at all other than that which could be ascribed to a rest cure

I am, Sir, yours faithfully,

Leo Delicati

Resident Medical Officer

Sept 26th Royal Mineral Water Hospital Bath

THE UBIQUITOUS COLD

To the Editor of The Lancet

Sir,—*It is to be hoped that* Mr Macleod Yearsley's letter will not go unnoticed by the Ministry of *Health* The time is long overdue that children with acute colds should be excluded from primary schools by masters and mistresses The acute cold and catarrhal state is almost certainly the soil which breeds the rheumatic heart disease of the poorer classes—a disease almost confined to those who have attended primary schools Is it not time that the school attendance officer was regarded as one of the causes of rheumatic heart disease?

I am, Sir, yours faithfully,

J C G Dickinson

Braunton, N Devon Oct 14th

DIATHERMY IN CANCER

To the Editor of The Lancet

Sir,—I have read with interest your leading article of Oct 6th on diathermy in cancer, prompted by the work of Mr Norman Patterson published in your columns This appraisement of Mr Patterson's work is of peculiar satisfaction to me, since his early writings on the subject first introduced me to this method of therapy in dealing with cancer of the mouth and pharynx, and have placed me eternally in his debt

The one point with which I find myself in disagreement is the opinion expressed in your article that Mr Patterson might have "gone further and asserted his doubts whether the use of cold steel can now be justified" I feel pretty certain that Mr Patterson still agrees with me that there are definite indications for the use of cold steel The results of laryngofissure and of laryngectomy by means of cold steel would seem to confirm this statement, and the end results of the treatment of certain forms of carcinoma of the hypopharynx do not demand the abandonment of the use of the scalpel, at any rate in all stages of the operation Dissections of the neck (with which Mr Patterson has dealt in a special section) to those whose anatomical instincts die hard still seem to be most safe and most drastic when carefully performed with cold steel and every surgeon with experience of this class of work must have cases of his own where prolonged survival has followed operation on the neck performed with cold steel, when the lymphatic glands—even many lymphatic glands—have been microscopically (nay, macroscopically) secondarily infected with malignant disease

I am, Sir, yours faithfully,

London, Oct. 10th G Gordon-Taylor.

THE UREA-CLEARANCE TEST

To the Editor of The Lancet

Sir,—Dr Hinden rightly emphasises the convenience of this test in providing an automatic valuation of known defective kidneys The graphic method which Mr Stewart and I suggested was designed for a rather different purpose—viz to explore the region between normal and subnormal function *One drawback of efficiency tests is that* a definitely "bad mark" generally means irreparable damage to the kidneys and cold comfort to the patient, whereas the correct way of tackling the problem of kidney degeneration would be to act on the earliest signals of distress If the heart offers any analogy, functional overstrain will usually precede chronic functional incapacity, and we gave reasons for believing that strained kidney function is manifested by changes in the volume concentration curve, the concentration varying proportionately less than it would normally do in response to variations of the secretion rate

I am, Sir, yours faithfully,

Wellington Salop, Oct 14th. A R McClure

PROPHYLAXIS AND ANAPHYLAXIS

To the Editor of The Lancet

Sir—I have read with interest the article in your last issue on Prophylaxis and Anaphylaxis In view of a recent experience of mine I feel that the tone of your leader is too optimistic, and that the risk of serum anaphylaxis is probably greater than hitherto we have imagined The facts are as follows In conferring a temporary passive immunity on a group of boys at a school where there had been a serious outbreak of scarlet fever I had the unfortunate experience of anaphylactic shock with fatal results in one case Five cubic centimetres of anti-scarlet fever serum was given intramuscularly Within a minute or two sickness and vomiting occurred The boy rapidly became collapsed and pulseless with lips, tongue and face markedly swollen One cubic centimetre of adrenaline solution (1 in 1000) was injected deep into chest wall well within five minutes of the serum injection followed shortly by another cubic centimetre Artificial respiration was carried out, but the oedema of mouth and air passages was so great that little progress was made There were never any signs of recovery

This boy was aged 14 years, well developed and healthy There was no history of asthma and no serum had been given previously except the small amount contained in the three prophylactic doses of T A F given two years before [illegible] have been sufficient to sensitise him, but it is doubtful In view of my experience I cannot subscribe to your statement that the risk of anaphylactic shock apart from asthmatics is infinitesimal if the serum is given by any route other than intravenous

I am, Sir, yours faithfully,

Harrogate, Oct 13th. SINCLAIR MILLER

DISLOCATION OF THE JAW: BEWARE

To the Editor of THE LANCET

SIR,—I have read with much interest Mr R. Kennon's instructive article on the Borderline of Dental Surgery in your issue of Oct 6th (p 751) The last paragraph of his paper deals with the dislocation of the jaw and its reduction. Mr Kennon's method is a good one, though differing somewhat from that known to me with doctor and patient facing each other, the patient usually sitting Yet it ought, I think, to be emphasised that the operator's thumbs ought to be protected, for sometimes with the reduction the jaw "snaps in" with a jerk, and the operator's thumbs get hurt I remember very well, when I was a student at the medical faculty, t professor saying · "Gentlemen, mind your thumb for as soon as the patient gets relieved of the dislocati he wants to say 'thank you'—and bites you."

I am, Sir, yours faithfully,

V SUK

Masaryk University, Anthropological Institute, Czechoslovakia, Oct 12th.

"RADIUM AND CANCER"

To the Editor of THE LANCET

SIR,—In an exceedingly kind review (p 813) of my book, your reviewer points out that I have omitted all reference to statistics May I assure him that this was done deliberately, as it was evident that any adequate consideration of statistics would involve a description of individual cases, and would extend the book far beyond the limits at my disposal I hope that some day a volume on the clinical results of radium treatment may repair the defect

I am, Sir, yours faithfully,

Harley-street, W, Oct 12th H. S SOUTTAR

OBITUARY

HENRY WENTWORTH WINDSOR-AUBREY, M.R.C.S., L.R.C.P.

THE death occurred on Sept 24th of Dr. Windsor-Aubrey, who had for many years filled the post of medical officer to the firm of Messrs W. D and H. O. Wills at Bristol He was the son of the Rev. H. G. Windsor-Aubrey, of Hale, near Salisbury, and received his medical education in Edinburgh and Bristol He qualified as M R C S Eng, L R C P Edin, and retiring from general practice joined the firm of Messrs. Wills in 1894, this being one of the earliest medical appointments made by a firm in the interests of their employees Before the passing of the National Insurance Acts and the formation of the panel the charge of the staff of a commercial business fell entirely to the firm's medical officer, and Dr Windsor-Aubrey examined the employees at the time of their engagement, gave them domiciliary attention when necessary, and did the accompanying dispensing He also advised the management of the firm when questions of hygiene, infection, and so on arose requiring medical knowledge, and speaking generally the responsibilities were far-reaching

Dr Windsor-Aubrey joined the army in 1916 and saw service at home and abroad for the next two years In Malta he superintended a prisoners' camp containing over 3000 prisoners, and had medical charge of Fort Ricasoli, the garrison fort, and other stations round the coast Towards the close of hostilities he was attached to numerous medical boards at home before returning to his old appointment For 11 further years he was responsible for the health condition of the Bristol factory, and when he retired in 1929 with a well-deserved pension, his loss was regretted by all with whom his work had brought him into contact. He was an accomplished man, wrote verses, composed music, and was a good amateur artist He died at the place of his birth.

SAMUEL HENRY NAZEBY HARRINGTON, M R.C S.

THE death was announced in THE LANCET last week of Dr. S H N Harrington, a well-known medical practitioner in Birkenhead Dr Harrington received his medical education in Liverpool and qualified as L R C P I. and L M. in 1885, taking the diploma of M.R C S two years later He practised for many years in Birkenhead and was well known both as a doctor and as a public worker Elected sometime ago as physician to the Birkenhead Borough Hospital, at the time of his death he was honorary consultant officer. He had been medical officer at the Post Office and a local referee under the Workmen's Compensation Act. He had been a magistrate of the borough for many years Dr. Harrington, apart from his professional work, took a large and intimate share in public movements of the city. He served on the town council and had been at times a member of the Libraries, Arts and Museums Committee of the city; he was in fact deeply interested in the promotion of the study of art and literature.

THE LATE DR. R. J. GITTINS

SUPPLEMENTING the brief notice in our last issue, Prof L G Parsons writes. "Robert Gittins was one of a group of brilliant young pædiatricians which during recent years has been associated with the Children's Hospital at Birmingham Both he and his wife were students at the Birmingham medical school and during five years of missionary work in India he came to realise the importance of pathological research and his own inability to carry it out satisfactorily On his return to England Gittins devoted himself to the study of the pathological aspects of pædiatrics and was appointed pathologist to the Children's Hospital in 1930 He carried out all the pathological work in the series of studies of anæmia which recently appeared in the *Archives of Diseases in Childhood*, and was solely responsible for the work on leukæmia which has everywhere been regarded as a notable contribution to the cytology of the leucocyte. This work is marked by careful and accurate observations and an attention to detail which was typical of the man, his whole life being dominated by an ardent desire for truth This whole-heartedness brought him the affection of all who knew him well He was prepared to argue on either side on many controversial subjects, although tenacious even to a degree of obstinacy where principles were concerned Nowhere did this character show itself better than in his championship of those in less favoured circumstances than himself, and it is not to be wondered at that his laboratory assistants would do anything for him. His last public appearance was in one of the series of post graduate demonstrations at the commencement of the new session when he spoke on pulmonary tuberculosis as a foe of little children. He felt strongly, even passionately, that the medical profession as a whole did not realise the deadliness of tuberculosis in childhood and took every opportunity of trying to enforce this view."

PANEL AND CONTRACT PRACTICE

The Care of Dependants

THERE is still much discussion about the best way of extending the benefits now obtained by insured persons to others who are not insured. The chief feature of the B M A scheme of 1930 was that the dependants of those at present insured should obtain similar benefits to those enjoyed by the insured. No capitation fee was mentioned, but the system was to be the same except for the elimination of insurance committees whose functions were to be taken over by the public health committees of county and borough councils. This scheme would have extended medical benefit to about 88 per cent of the population; it was criticised chiefly on the ground of cost and of the difficulty which would be sure to arise in defining the dependants, an insured person being almost always a worker. Thrift was, as now, to be encouraged by compulsory contribution to the cost—the State, the employer, and the employee all paying something, but the proportion was not then settled.

The scheme submitted to the recent Southport conference of the Labour Party[1] is for a non contributory service available to everybody staffed (eventually) by whole time salaried officers working (in towns of any size) in central surgeries where patients would go for consultation instead of (as at present) to those of the doctor of choice. These central surgeries or clinics would have all necessary apparatus for examination and diagnosis including specialist work, and for such treatment as could be given without recourse to hospital. These clinics would feed the hospital beds and be worked in conjunction with the staff of such hospitals. They would replace the system of referees now worked by the regional medical staff under the Ministry of Health, the assumption being that certificates for sickness benefit—roughly equivalent in money to unemployment benefit—under the supervision of experts available under all conditions, would be so good that independent second opinions would not be required. Under this scheme specialist services would be available without charge to any body asking for them. In this scheme insurance practitioners are to be asked to join at first as part time officers remunerated on a scale proportional to the number of insured patients they have lost by the abolition of panels. All new entrants would be on a whole time salaried basis, so that as the older members retired the service would become completely whole time. Free choice of doctor being in this way gradually and almost imperceptibly abolished, no substitute is suggested for that form of healthy competition which induces the newly qualified as well as the more experienced men to do his utmost for his patients not solely because he is keen on his work but because zeal does promote financial success.

A complete scheme for a general practitioner service was published[2] last week by the Medical Practitioners' Union. The Union has accepted as a working rule the need for expanding and modifying existing institutions, rather than abolishing them in favour of some new and untried system. The scheme is arranged in numbered paragraphs of which the gist is as follows:—

(1) Whilst not condemning contributory schemes as such the Union is unable to discover any place which they might usefully and economically occupy in an extended general practitioner service.

(2) Medical benefit should be extended to the whole population.

(3) So much of the present contribution as is applied to the provision of medical benefit (doctoring as apart from sick pay) should cease.

(4) Medical benefit should be removed from the control of approved societies.

(5) There should be unrestricted right of choice and change of doctor, subject to certain disciplinary arrangements suggested for the investigation of abuse.

(6) General practitioner consultations should be part of ordinary medical benefit.

To administer these proposals the Union suggests that the local offices of the medical service should be independent entities. The insurance committee would become the county medical service committee, the panel committee would become the county medical committee. The present central negotiating body (I A C) would become the central medical committee, composed of nominees of the county medical committees. The disciplinary machinery would be thus:—

(a) The clerk of the medical service committee would investigate and deal with early complaints of trivial nature.

(b) Complaints of more serious nature, being generally due to a financial factor, would be less frequent when capable of settlement locally; the complaint would go through a purely professional tribunal to the judicial subcommittee of the county medical committee.

(c) Cases for removal from the service would be referred to a reformed General Medical Council.

In this scheme some 40 million persons would be provided with the services of 20 000 practitioners and the Union suggests a capitation fee of 13s per head, of which 1s is for mileage, this being for general practitioner service alone. Finally the Union recommends the encouragement of existing maternity services by the State as it sees fit, but is "strongly opposed to the grandiose schemes which are often demanded but whose authors betray little knowledge of the real issues at stake—e g the necessity of dealing with the factor of maternal resistance to microbes and not concentrating solely upon asepsis. Grants might be made by the State for individual specialist treatment at institutions, bearing in mind that as soon as the State assumes responsibility for providing specialist services voluntary help of these institutions will probably seek some other channel for its outlet."

All these schemes are ostensibly drawn up to provide the best doctoring possible for the population upon terms which will attract the profession and yet will not be burdensome upon those who have to bear the cost. Hitherto, the method of attendance in ordinary private practice has been the ideal to be aimed at,
the patient choosing his doctor
him for his services either party being
make a change whenever he wishes
cost the bulk of the industrial pop
afford to use this method; hence the

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[1] See THE LANCET, Oct 6th 1934, p [illegible]

[2] Medical World Oct 12th 1934 p [illegible]

form of contract practice Two deductions follow: Those who can afford private treatment should be able to have it without also paying for a form of contract treatment they do not require Having on financial grounds made a contract the patient should then be assured of a service as similar as possible to that of private practice The scheme of the M P U does provide free choice and change of doctor, but in it the patient makes no contribution whatever towards its cost except through the rates Presumably the public will not appreciate a service provided thus, any more than it does at the present time the services of the district medical officer. The suggested central negotiating body would not be as strong as that as at present constituted Anyone who knows about the present Insurance Acts Committee appreciates the representation on it of other activities not included in the general practitioner contract—hospitals, ophthalmic work, medical officer of health—whose opinion and advice are of the utmost value to insurance practitioners who form the bulk of the committee.

Unfortunately, most of the trouble about extending benefit to dependants is due to cost, although no doubt there are also administrative difficulties to overcome. Of the schemes mentioned one might cost less, but by abolishing the pattern of practice—that adopted by all educated people who can afford it—would fail to attract men of ability into the profession The other would increase the rates to such an extent as not to be popular with anyone, without compensating advantage on the administrative side.

The Canadian Scheme

Economic depression in Canada has swollen the sections of the community who are unable to pay for the medical care they receive, or need but do not receive, and particularly the indigent section, for whom little provision has hitherto been made by the central or local government authorities The responsibility for the care of the indigent rests upon the provinces, who may delegate it to the municipalities, but in general neither the provincial nor the municipal authorities have fulfilled this responsibility; and it seems that the federal government do not regard medical care as a necessity, since no provision has been made for it in the unemployment relief legislation. The result is that most indigent persons receive medical treatment as a private contribution to charity by the medical profession; and so firmly is the idea fixed in the public mind that this state of things is as it should be that surprise has been expressed that doctors should expect to be paid for the medical care of the indigent It is not unnatural that Canadian doctors should seek some method whereby they would receive reasonable remuneration for the important services they render to the community.

Fortunately, the Canadian Medical Association have not failed to furnish leadership in these difficult times. For some years their committee on economics has studied the provision of medical care for persons unable from their own resources to pay for the medical services they need and has now issued[1] "A Plan for Health Insurance in Canada" This report—clear, concise, informative, and impartial—is an important contribution to what in America is called "medical economics" The first part describes what has been done in other countries to provide medical services on an insurance basis. The main features of the English scheme are well described and with due appreciation of the significance of the principles on which it is based. The local medical committees and the regional medical staff are regarded as two great assets of a scheme which is handicapped by the large number of approved societies doing work that could be better done by a single organisation administered by the State.

The report then formulates a plan of State health insurance suited to Canada's needs, providing a wide range of medical and ancillary services but no cash benefits. It would be administered centrally by the public health departments of the provincial governments, locally by the municipalities and rural local government authorities The administrative authorities would be advised by central and local insurance boards representing the various interests concerned. It is regarded as of fundamental importance that the professional side of the medical service should be controlled by the organised medical profession; and in each province there would be a central medical services committee and local medical services committees, appointed by the provincial and local medical associations respectively, who would assume responsibility for the quality of the medical service and for the discipline of the doctors. Insurance under the scheme would be compulsory for all persons with dependents and an income of less than $2500, or without dependents and less than $1200 The cost of the scheme would be met by contributions from the insured persons, their employers, and the State. The contributions of indigent persons would be paid by the State; otherwise the conditions are the same for them Insured persons and their dependents are to be provided with medical, dental, pharmaceutical, and nursing services, and hospital care; the doctors would include general practitioners and specialists, the relation between the former and the latter to be settled by the central medical services committee Any doctor would have the right to enter the service, the insured person to have free choice of general practitioner; the method of medical remuneration in any area would be selected by the doctors of the area. The patients would pay part of the cost of the medicines prescribed for them but would not, as in the French scheme, pay any part of the doctor's fee Voluntary insurance, for hospital care only, would be open to persons with incomes above the insurance level

The scheme, as has been said, includes no cash benefits. Its authors feel strongly that support during periods of incapacitating sickness should be a charge on unemployment insurance—the unemployment being due not to inability to obtain work, but to inability to perform it—and that cash benefits should be dissociated from health insurance The tendency to separate cash benefits from insurance medical services has been steadily growing since it first found expression in the British scheme 23 years ago, when the Insurance Bill as originally introduced was modified by transferring the administration of medical benefit from the approved societies to insurance committees specially constituted for the purpose. But no national health insurance scheme without cash benefits has yet been established, and if the Canadian scheme reaches the legislative stage it may be found politically impossible to keep it free from some form of cash benefit At present, however, the scheme has not gone beyond the stage of reference to the provincial medical associations, whose views are requested before Jan. 1st, 1935, when the executive committee of the C M A will proceed to redraft the report in the light of those views for submission to the council of the Association.

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[1] Canad Med Assoc Jour, September, 1934 Supplement, p 25.

ADDRESSES AND ORIGINAL ARTICLES

HUGHLINGS JACKSON AND HIS INFLUENCE ON NEUROLOGY *

By Sir E Farquhar Buzzard, Bart, K C V O,
M D Oxon, F R C P Lond
REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD

May I claim some degree of propriety for the choice of my subject on the ground that within a few months, and before the next Schorstein lecture is delivered, the centenary of Dr Hughlings Jackson's birth will come and go, escaping perhaps the honoured notice it *must* some day be accorded in the history of science? I have the late Dr Schorstein's authority for saying "must" because he described Jackson as possessing the rare combination of gifts "that sets a man among the little band of whom are Aristotle and Newton and Darwin"

Gustave Schorstein

Dr Gustave I Schorstein, in whose memory this lectureship was founded, was born in 1863, a year distinguished in the history of the London Hospital by the election of John Hughlings Jackson to the posts of assistant physician and lecturer in physiology Schorstein himself became assistant physician to the hospital in 1894, the year in which Jackson retired from active work as full physician after holding that office for 20 years Thus only for a few years as a student, as a house physician, and as a medical registrar did Schorstein come directly in contact with Jackson's work, and I am not in a position to say to what extent the former's outlook on medicine was influenced by the greatest clinician of those days However that may be, these two physicians, each of whose names is associated with and honoured by a lectureship, were widely separated in origin and in education, in their ambitions, and in their achievements

Schorstein, a Jew, a graduate of Oxford a freemason, a great lover of music and of all forms of art, endeared himself to his many pupils patients, and colleagues by reason of his culture, his warm hearted friendship, and the untiring enthusiasm and energy with which he sought to promote the interests and the reputation of his medical school His early death at the age of 43 may have deprived him of the opportunity of linking his name with any notable contribution to the progress of medical knowledge, but it is recorded of him that "his clinical lectures were most popular and his literary abilities made them models of what such lectures should be, clearly thought out, logical and beautifully expressed so that the most thoughtless could not help but learn"

The Personality of Hughlings Jackson

Much more could be, and has been, said and written of Gustave Schorstein, but to day I am here to remind you of that other physician of your hospital of whose achievements in the wider world of science you and British medicine will always be justly proud But before entering upon my task may I ease my conscience with two expressions, one of diffidence and one of exoneration My feeling of diffidence is aroused by the recognition that the part of biographer has already been played with devotion and illumination by Dr James Taylor, whose charming memoir must inevitably be consulted by all who seek intimacy with the work and personality of Hughlings Jackson My exoneration for trespassing on that Boswellian field relies on the fact that from the day I left the nursery until I became his colleague on the staff of the National Hospital in Queen square Jackson was one of the most familiar and outstanding figures in my domestic and professional life. And if Dr Taylor's portrait of the man leaves little or nothing for another brush the study of an old master may always bring to light new features of interest and instruction

It would be futile, and perhaps unprofitable, to try, in so short a time, to describe how this, that, or the other of Jackson's innumerable contributions to medical literature influenced, both contemporaneously and posthumously, the development of our insight into the problems of neurology On the other hand there are lessons to be learned from a close inquiry into the make up, the character, the methods, and the outlook of one of whom it was said by the late Dr. Mercier "No man ever had a better claim to the title of Genius" Even his habits and peculiarities his whims and crotchets may help us towards understanding the powerful influence he exerted on those who were fortunate enough to come within its sphere

A few bare facts must serve as an introduction to my more personal narrative Born near York on April 4th, 1835, the son of a yeoman father and Welsh mother, he escaped all danger of over education by attending two or three obscure schools before becoming apprenticed to one of the lecturers in the York medical school After a short period of study at St Bartholomew's Hospital, where Sir James Paget was one of his teachers, he returned to York, with the qualification of M R C S and L S A, to fill the post of house surgeon at the dispensary In that capacity he learned to appreciate "the brilliant and stimulating speculations," a term so applicable to his own later efforts, of his physician, Dr Laycock, who afterwards became professor of medicine in the University of Edinburgh Returning to London in 1859 with an introduction to Sir Jonathan Hutchinson, he soon became attached to the Metropolitan Free Hospital, the National Hospital, Queen square, and the "London," in that order and at the instigation of Brown Séquard at Queen square began his investigations of neurological problems

After a long engagement, Jackson was married in 1865 to his cousin, whose death in 1876 left him a childless widower for the remainder of his days Dr and Mrs Jackson had formed an intimate friendship with my parents and from the date of her death until the death of my mother 25 years later he was a constant, almost daily visitor at our house And his visits were so unlike those of any other friends and so characteristic of the man that they formed a lasting impression on my mind The ritual was almost unvaried and admitted of no variation without running the risk of frightening him away He was in regard to social amenities intensely shy and completely embarrassed by anything approaching effusiveness or affectation of manner We would generally be at luncheon; the door would open and Jackson would enter, no one would rise, he would pull a chair up to the table and make a few remarks, perhaps tell a humorous story with only a twinkle of the eye disturbing the solemnity of his features, and after five perhaps ten minutes he would [illegible] something about remembering an engagement and leave the room No one must rise or see him off the premises, but very often he would ask one of us children, generally my sister, to go for a drive. In that case the child in question would jump up and prepare for the outing in the shortest possible time so that he should not be kept waiting Let me quote from my sister's recollections of these days:

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* Schorstein lecture delivered at the London Hospital on Oct 18th.

5800

"I was very young when I was first taken for drives in London by Dr Hughlings Jackson The loss of his wife had been a great blow to him and he was a lonely man His quiet, rather reserved manner would not lead one to expect that the companionship of a child would be of much interest to him, but he constantly called for me, and took me with him—sometimes when he had professional visits to pay, sometimes to the city 'to buy a newspaper,' when he would leave me at Birch's sitting by a small table, and trying to get through a large ice before he called for me again We did not talk much on these expeditions; he sat in one corner of the landau and I in the other He sometimes read a paper—he was very short-sighted but did not use glasses—but I remember him chiefly leaning back in the corner of the carriage with his arms folded, and with a thoughtful, rather wistful, expression. He *took no interest in his carriage and horses* except as a means of transport, and when, as occasionally happened in frosty weather, one of the horses would fall and a crowd assemble he would barely look up from his paper and would calm my excitement with the words 'This does not concern us, Brown (the coachman) will deal with it' He was impatient in that he disliked being kept waiting —I think it would have been agony to him to sit and watch me eat those ices at Birch's—and I have seen him fidget on a doorstep if his ring were not answered at once I never remember his showing any other form of impatience, he was always kindness and gentleness itself

"He was a great novel reader and had an enormous admiration for Dickens, Jane Austen, and Trollope. He constantly quoted Dickens and used to refer quizzically to a mythical husband of the mythical Mrs Harris, in 'Martin Chuzzlewit,' as representing what one might term the spirit of contrariness For instance, on a wet day 'Mr. Harris has arranged that we shall not go to Richmond this afternoon' I think only his intimate friends realised what a keen sense of humour and appreciation of wit was hidden beneath that grave, rather shy manner He gave me all Jane Austen's novels when I fear I was too young to appreciate them as I do now We had heated arguments over Fanny in 'Mansfield Park,' I declaring she was a prig, and he, teasingly, that she was his idea of feminine perfection On a holiday he would buy 'yellow-backs,' and on one occasion at a bookstall on a pier he chose one of these, and immediately tore off both outside covers and then tore the book itself in two, putting one half in one pocket and the other in another The face of the vendor was a study, whereupon Dr Jackson made the Johnsonian remark 'That man thinks I am mad, whereas it is the people who do not do these things who are mad' He used to take me to the Old Westminster Aquarium, where we attended the performances of acrobats, of educated fleas, and of Zazel who was fired out of a cannon, with equal gravity. I have often wondered since what profound psychological ideas were the outcome of these queer entertainments We also went to the Zoo—many times—and to the Crystal and Alexandra Palaces

"He was engaged for years in writing what he always referred to as 'The Memorial' (referring to Mr. Dick in 'David Copperfield'), and if bored by an interview and anxious to get home, he would say gravely and quietly. 'I must now go and write the memorial' An old friend of his and my father's, Mr. W. W Fenn, the blind writer, sometimes drove with us The noise and life of the city appealed to him as it did to Dr Jackson, and the buying of a newspaper was made the excuse for expeditions to the Bank and the Royal Exchange He had no particular taste for music or art in any form, he often admitted he could not distinguish the National Anthem from 'Rule Britannia,' but he liked going to the theatre, and he took me to my first play, *Uncle Dick's Darling*, in which Toole was acting. On that occasion he sat through the whole performance, but this he did very rarely. His natural restlessness made it impossible for him to remain in the same place for as long as three hours, so he would see one act at a time"

And so too at any remote spot in the country where we might be spending our summer holidays we would never be surprised to see Jackson drive up to the door in a carriage and pair, spend perhaps an hour and disappear with no intimation, and probably no knowledge himself, of where he would find himself on the following day For many years he was a more or less regular attendant at our Sunday suppers; his place was always prepared but no notice was taken if he failed to put in an appearance, and he would never prolong his stay after the meal was over His nature revolted against all binding engagements and if the bond was inevitable he was never happy until the engagement was fulfilled For this reason he very rarely attended private dinner parties or public functions of any sort On the other hand, a clinical investigation in which he was interested had to be carried out at once, and a book or paper in which he expected to find something pertinent to his line of thought at the time was always secured with the least possible delay

My earlier recollections, therefore, have nothing to do with his professional life or his scientific eminence, I remember him in those days as the generous, kind hearted but rather grave family friend or pseudo uncle whose mind seemed to be in a state of constant conflict between his desire to give pleasure and his fear of being bored or bound A much closer association with his intellectual side began when I became his clinical clerk and house physician in 1899 and continued until shortly before his death in 1911 As Dr. Taylor has said.

"I do not think it can be easy for anyone who was not brought intimately in contact with him to understand the feelings of reverent affection which all of the younger generation who had enjoyed that good fortune always entertained for the great personality of Hughlings Jackson He was so simple, yet so stimulating, and extraordinarily careful of his words so that he might convey his exact meaning No doubt this is the reason why his papers are so often overloaded with footnotes. I once heard him say with a smile that he was distressed to think that in speaking of a man as being covered with a rash from head to foot he had been speaking unscientifically, for what he should have said was 'from the tip of his nose to his perinæum!'"

The Development of Neurology: Jackson's Methods

In looking back on those years something may be learned from a study of the factors which combined to give Jackson the unique position he enjoyed among his contemporaries and pupils To all appearances he was singularly detached from his surroundings, he would seem at first sight to live and move in a world of his own But such a conclusion would be quite erroneous Little or nothing escaped his observation, especially in his clinical work, but the faculty he possessed in an extreme degree of being able to separate essentials from non-essentials saved a remarkable memory from being overloaded with mere ballast It was the same with his reading, he always appeared to absorb, almost from a glance at the cover of a book, all that really counted in its pages Thus his mind was a storehouse of facts acquired at first or second hand, a mind, however, which in no other respect resembled a storehouse Rather a hothouse in which everything was alive and growing and in which every new plant immediately found its natural place and associations Not natural to the casual and uninitiated onlooker, these associations were sometimes as incongruous, for instance, as that of punning with ocular paralysis and insanity. To him the study of three such different phenomena together was full of suggestion and profit, and his paper on the Psychology of Joking is not only characteristic of the way in which his mind worked but reveals startling premonitions of the trend of modern thought. As in the motor and sensory organisation of the nervous system he envisaged upper, middle, and lower levels, so in the "play" of the mind he recognised "puns," "witticisms," and "humorous statements" as representing three comparable degrees of evolution. Punning was to him a disturbance at the lowest level, in other words a kind of "mental diplopia." "We owe some respect," he added in his quaint but suggestive way, "to the first punster, because he had over and above mind required for mere animal existence some surplus mind for greater ends of life." Pursuing his theme of mental diplopia, the same paper contains these remarks which, we must remember, were written nearly 50 years ago:—

> "Whilst writing I suddenly think of York Minster. Here is manifest mental diplopia: (1) narrowed consciousness of my present surroundings, with (2) cropping up of consciousness of some quasi former surroundings. Of course something, whether I can mentally seize it or not, in my present surroundings, has developed a similar something associated with York surroundings."

And Jackson wrote this before the "subconscious mind" had been invented!

If the modern psychologist is interested in such a statement the modern educationist might usefully recall this further quotation: "The process of all thought is tracing relations of resemblance and difference, from simplest perception—to say what a thing is, is to say what it is like or unlike—up to most complex abstract reasoning." And he finishes this paper which began with a consideration of various degrees of humour with these significant words:—

> "I submit that, recognizing the enormous difference between insanity and ocular paralysis, a profitable comparison and contrast may, nevertheless, be made, which will further a better knowledge of both. I do not mean simply that ocular paralysis may be taken as an illustration to simplify explanation of a case of insanity, but also that, both being examples of dissolution, the very same principles are displayed in each."

During the first 25 years of Jackson's active professional life neurology in this country, as well as abroad, was making rapid strides. He had as fellow labourers in the field men such as Brown Sequard, Gull, Ferrier, Bastian, Gowers, and Ormerod, all engaged in gathering a rich harvest of clinical and pathological data from the bedside and the post-mortem room.

Jackson's pre-eminence in such distinguished company was due to the fact that not only had he no superior in the work of making detailed and accurate observations, but no real rival in the art of generalisation or, in other words, of integrating those observations so as to produce an harmonious design of the nervous system as a whole. I have already illustrated this gift in relation to a side issue such as that of joking, and I need not remind you of the revolutionary effects of his generalisations in regard to the localisation of cerebral function, of the light he threw upon the mechanism of speech, and of the supreme value of his analysis of convulsive states, whence arose "Jacksonian epilepsy." It is not enough, if we are to learn something from a study of Jackson's mind, to content ourselves with the remark that he had no superior in the work of making detailed and accurate observations. Let us see what this really means; let us realise how far his standards of accuracy, of self-imposed truthfulness and of honest deduction rise above those of ordinary mortals and how little can anyone hope to emulate him without adopting his methods of recording clinical histories and of carrying out clinical investigations. I take, almost at random, this published note of Jackson's concerning a patient suffering from auditory vertigo:—

> *November 16, 1877.*—A man, 25 years of age, had his first attack of vertigo four years ago. He was taken when apparently quite well (he was playing cricket) with giddiness; he did not become insensible; he vomited; he had a noise in his left ear. He has since been deaf of that side, but whether he was so before his first vertiginous attack or not he cannot be sure; he has had a continuous "humming" or "buzzing" (he used both words) noise in that ear ever since. During the last four months he has had many attacks.
>
> At his first visit I had only his account of the paroxysm to go by. He said his attacks began by the left eye "being full of specks"; they were not bright nor coloured. Things (i.e., things in the room where he might be) began to pass to the right—he said "from his left eye over his nose." The same things kept passing continually in this direction, *reappearing* on the left, and again and again passing to the right; he did not see them *coming back*. He said that *next* he became giddy and vomited. There was one attack in which he declared that he lost consciousness; but apparently he really did not, as he said he knew people about him; he could not speak. This attack began suddenly; he was giddy, and vomited.
>
> About a fortnight later I saw him again. He had had but one slight attack—"a hot sweat." Whilst telling me that he had been better, he became suddenly ill. I led him to the sofa, as he seemed apparently unable to stand. He lay half reclining on the sofa. He looked very ill and said he felt giddy. I looked at his eyes about two minutes after he began to complain, or rather, I saw them moving, it not having exactly occurred to me to look at them. What I saw is, I think, exactly confirmatory of what he told me on the previous visit and of what he said after the seizure I witnessed. I asked no leading questions at any time. The pupils were very large, and the two eyes were in movement. Each eye was partially and very slightly rotated to the right in frequent jerks from left to right. The end of a mantelpiece was opposite him. I was much interested in hearing him *volunteer* the remark about the mantelpiece that "it is going in this way" (he jerking his hand from left to right to show what he meant). After the brief time taken in writing down the above observations—I wrote them down at once—I found that the eyes were still; the mantelpiece had, he said, ceased "going" to the right. The attack was not a severe one. I guess its duration at ten minutes. His pulse was not irregular. I did not, however, feel it throughout. Towards the end of the paroxysm he perspired; his temperature in the axilla was normal. There was no sickness.
>
> The observation was hurried. I had to attend to the patient as well as to observe his symptoms; but it is worth recording if only to draw attention again to the desirability of making observations of the eyes during paroxysms of auditory vertigo. Things I should try to observe had I another chance would be more carefully the nature of the jerks—the number in so many seconds. I should ask the patient to tell me how things outside moved, being very careful not to let him know how I expected them to move. Then after the jerking movements had ceased I should note whether there were any [illegible] of after images. I made no inquiries in this case. It is possible that the mantelpiece might seem to be slightly [illegible] in the opposite direction when the spasm was over. I ought to have tried to ascertain if [illegible] move as far and as rapidly to the right as they moved to the left. But in a bad case of auditory vertigo [illegible]

not, I fear, be able, on account of the great prostration and misery of the patient, to make any precise observations

The patient was much benefited, for a time at least, when the treatment advised for such cases by Charcot was begun—large doses of quinine. On Jan 3rd, 1878, I prescribed four grains of quinine three times a day On his next visit he said he had not been so well for four months I saw him some months later, he said the quinine restored him wonderfully, and he took it when "a little queer" This queerness was "going a little giddy", "things seeming to go" to the right Moreover, he had had three stronger attacks

Jackson adds a little later:—

> "Several of my medical friends tell me, referring to my account of the paroxysm I witnessed, that the mantelpiece 'ought to have appeared to move to the left—in an opposite direction to that of the eyes' That the eyes moved to the right I am sure, and the patient always told me that things passed to the right I never asked him any leading questions Until these objections were made, it never occurred to me that there could be anything incongruous betwixt his report and the direction of movements of his eye, and now I do not see anything discrepant"

These notes were published in *Brain* in 1880 when he could hardly have foreseen that the later part of his life was often to be rendered miserable by attacks of auditory vertigo associated with the usual accompaniment of deafness But I have quoted at length in order to point a particular lesson These notes are a model of what medical notes should be and almost always fail to be. He is so careful to depict in detail the circumstances surrounding an attack of illness, to describe meticulously, using the patient's own words, the nature of his symptoms and their sequence in time He commits himself to nothing which he was unable to verify—"I led him to the sofa, as he seemed unable to stand". he had not actually tested the ability to stand "His pulse was not irregular," but he adds "I did not feel it throughout" He lays as much stress on what he did not as on what he did observe and does not hesitate to blame himself for omissions in the vivid picture he has painted of an attack of vertigo Emphasis on these features of Jackson's work are not untimely, because at the present day, 50 years later, the general standard of medical practice, and especially its diagnostic skill, would be raised out of all recognition if we could cultivate some measure of his enthusiasm for precision in observation and honesty in record. One can imagine that Jackson never committed himself to a statement without severe self cross-examination in regard to its truthfulness

The Chief and His Juniors

Perhaps Jackson's personal influence on his juniors can be understood more easily if I give you the experience of any one of his house physicians at the National Hospital during the last 20 years of his life. Unlike those of his colleagues, his visits were quite unfixed in regard to time They were frequent but irregular in their frequency, depending on his interest in some particular patient or problem at the moment The ward-round was neither formal nor prolonged and it was impossible to predict to which case he would devote most attention If one was foolish enough to remark that "this is just an ordinary case of hemiplegia" he might spend the next 20 minutes in demonstrating its unusual features or in explaining how such features illustrated one or other of his theories in regard to the evolution and dissolution of the nervous system Perhaps, for instance, he would ask one to make observations in regard to the patient's respiration during sleep and compare the results with similar observations on other patients, he would never fail, at any rate, to stimulate one's interest by suggesting how the study of a simple clinical phenomenon could throw light on more obscure neurological problems Quite suddenly his attention and interest would seem to fail; he would escape from the ward, but before we parted at the front door of the hospital he would say quietly "I will find you a reprint setting out my views on the subject we have been discussing, but you need not believe them—you know I have been called 'a Bedlamite theorist.'" And sure enough, perhaps the same day, certainly the next, he would leave some reprint or typescript extract of his own or of another author's contribution to the vexed problem I still preserve scores of these, most of them annotated on their margins in a handwriting which, in some instances, I have not yet been able to decipher!

There was always something "left over" after one of Jackson's visits to the hospital, something provocative of further inquiry One must not forget, too, his little bits of advice given with diffidence and no suggestion of patronage "I would commend to you the practice," he would say, "of sitting in an easy chair, after the day's work is over, with a notebook on your lap, thinking of some subject which has recently excited your interest, allowing your mind to wander at random around it, and jotting down the speculations it may arouse" There can be no doubt that, from an educational standpoint, Jackson had a profound belief in what I might term "mental pseudopodism," in encouraging mental processes to grope, in the dark as it were, for points of contact with diverse and unripe fields of reasoning, in the hope of securing for the future serviceable, and perhaps profitable, paths of association

Jackson's Profound Influence

Whilst it would be an act of supererogation to emphasise the importance of the part directly played by Jackson's writings in advancing our knowledge of the physiology and pathology of the nervous system, stress may well be laid on the indirect influence he exercised in these more personal ways on his disciples to the same end To remind you that Henry Head, James Taylor, Risien Russell, Wilfred Harris, James Collier, Edwin Bramwell, Wilfred Trotter, Gordon Holmes, and Kinnier Wilson are only a few among the many names of those who regarded Hughlings Jackson as their leading light, suffices to prove that the passage of years has not weakened the drive of his inspiring personality or allowed his precepts to be forgotten

A leading article in the *British Medical Journal* of 1931 contains these appropriate words —

> "It is 20 years since he died, and if personal memories linger only with comparatively few, the spirit which animated him is undying so long as it is reborn in those that come after him and find in his work an incentive and, in its emulation, a reward"

Here, in the London Hospital, such words cannot fail to recall to your minds the name of Henry Head one of Hughlings Jackson's most faithful disciples and one who, more than any other, not only expounded but developed and enriched the doctrines of his master. Four years after Jackson's death Head published in *Brain* an invaluable review of the former's articles on Aphasia and Affections of Speech, wherein, in addition to digesting and summarising some 36 separate papers, he showed how long and how woefully their lessons had been neglected In fact, it may be said, Head gave them a new lease of life, transfused with his own clear and vigorous powers of exposition It is a matter of infinite regret that for some years now Head's health has not permitted him to continue his own brilliant researches and to wear in public the mantle which so naturally descended to him on Jackson's death.

Perhaps Head revealed the secret of Jackson's genius for discovering those principles which now underlie all inquiry into disease of the nervous system when he wrote of his work on aphasia in these words —

> "He did not choose those cases which exhibited the most perfect conditions for experimental observation he would watch a patient in the throes of delirium tremens as he tossed in the padded room, or listen to the laughter of a man with pseudo bulbar paralysis, or the recurrent utterance of some partly demented aphasic, and from such observations would spring the luminous exposition of a principle He never failed to recognise that the phenomena of aphasia did not stand alone they illustrated the same principles and were governed by the same laws as other functions of the nervous system. Above all he insisted on the importance of remembering that dissolution occurred first in the most highly organised products of neural or mental activity, leaving the more lowly at liberty to express themselves freely in the resulting symptoms"

In conclusion, may I express my conviction that no estimate of the influence exerted by Hughlings Jackson on neurology and neurologists could be accepted if it failed to specify explicitly his inborn truthfulness, generosity, and gentleness, attributes which, with his keen sense of humour made him one of the most lovable men of his generation.

THYROTOXIC HYPERTENSION

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The purpose of this paper is to examine the common occurrence of thyroid toxæmia in patients with essential hypertension (hyperpiesia) We find this association so prevalent and so influential on the course, prognosis, and treatment that we venture to submit the term thyrotoxic hypertension as applicable Hypertension is not yet much subdivided, largely owing to ignorance of its ætiology Our title, though stressing a thyroid factor which is toxic, does not connote belief in its thyroid ætiology as might that of thyrogenic hypertension

The full picture of thyrotoxicosis as in Graves's disease is of course well known, but the chronic and less obvious grades of thyroid disease are often overlooked To these the term toxic goitre has often been applied, or even pathological terms such as parenchymatous, adenomatous, or cystic goitre As there is a lack of correspondence between the clinical and pathological nomenclature, we prefer to use the simple term *goitre* There are thyroid enlargements which never seem to produce demonstrable effects and with these we are not concerned Where symptoms are produced they are similar whatever the pathological process, at any rate, the histological changes cannot be correlated easily with the clinical varieties Whatever the thyroid lesion of this noxious class, its effect upon the heart is the same the degree of activity and the duration of the disease are more important than the pathological type Tachycardia, a tendency to auricular fibrillation, and ultimate cardiac enlargement and failure may result from all forms—if they are severe enough and long enough continued It is a common experience to find the heart affected when it was thought that a past exophthalmic goitre had been cured, or when a chronic goitre of 10 to 30 years' duration had been regarded as quiescent

Assuming the unity of thyrotoxic affections of the heart and reverting to blood pressure, it is common knowledge that this is often influenced In fully developed exophthalmic goitre Plummer [56] described a moderate rise in the systolic pressure with a normal or lowered diastolic pressure, and consequent increased pulse pressure This was also the experience of Gallavardin [18] and Taussig [61], and it has since been generally confirmed [48 13 16 33 65] In the forms where adenomata are associated with hyperthyroidism some writers have found both a higher systolic and diastolic pressure than in exophthalmic goitre [43] though Hurxthal [24] suggested that the explanation may be the greater age at which this type of goitre commonly occurs Treadgold [64] has recently shown that enlargement of the thyroid in healthy adults is associated with a systolic and diastolic blood pressure slightly above normal

Besides this typical almost physiological effect of hyperthyroidism, it has sometimes been thought that permanent essential hypertension might be a consequence of thyrotoxæmia because of a specific effect on the vascular system Plummer [50] felt that long-continued intoxication by a hyperplastic thyroid might lead to hypertension, and Gallavardin [18] also viewed toxic goitre as a possible cause Goodall and Rogers [21] mentioned a late goitre stage where hypertension was accompanied by secondary changes in the cardiovascular system They held that such patients were thereby rendered unsuitable for operation On the other hand Hurxthal [24] found no evidence of permanent hypertension in a careful analysis of 458 cases of toxic goitre As we are not in a position to produce evidence sufficient to prove that there is a thyrogenic as distinct from a thyrotoxic hypertension, we will not pursue this subject further But the frequency of thyrotoxic hypertension persuades us that thyroid toxæmia will some day be recognised as one of the sources of essential hypertension and not merely one of its concomitants

Apart from this problem there is no doubt that they are frequently associated Askey and Toland [1] found that more than half of 133 patients with toxic goitre (excluding exophthalmic goitre) had a blood pressure above 150 mm Hg systolic, and 110 mm Hg diastolic Rosenblum and Levine [44] found a strikingly large number of cases of hypertension (23 in 42) among a series of patients with hyperthyroidism and gross cardiac involvement The frequency of the association is also revealed in the papers of Lian, Stanka, and Thoyer,[33] Jones, Seabrook and Mercer [28] Lerman and Means [31] and Read [44] Further, in deciding the effect of goitre in causing enlargement of the heart, the main difficulty is introduced by the patient suspected of or proved to have hypertension in addition Parkinson and Cookson [47] found high blood pressure in 19 of their [illegible] clinical cases Rich and Bourne [2] found a raised blood pressure in 11 of 36 cases and they considered that thyrotoxicosis may initiate a hypertension in individuals predisposed to it

The combination of thyrotoxicosis and hypertension is more frequent if we [illegible] [illegible] arterial hyperthyroidism," examples of which are now multiplying in the literature[33 52 34 22 19 69] and to which Towers[63] has recently drawn special attention Such partial thyrotoxic syndromes may even be found without a demonstrable goitre,[3 66] though a thyroid not palpably enlarged may yet be palpably abnormal in its consistency. Although we might accept that a thyroid gland is never thyrotoxic if it is normal in size[25] and consistency, we are satisfied that a toxic thyroid gland may be so elusive as to be normal on clinical examination.[35] Hitherto such masked varieties have been held to account for certain forms of cardiac disorder and disease, now it appears that they must figure in the consideration of vascular disorder and disease

If a goitre is affecting a patient with hypertension, it might be thought easy to establish the fact by determination of the basal metabolic rate (B M.R). Yet this is not so, because the B.M R is often raised in hypertension itself,[49 7 41 20 42] and especially if there is cardiac failure. Though in some of the cases quoted thyrotoxicosis was thought to be responsible, the influence of simple hypertension cannot be excluded A greater objection is that the B M R may be normal with a toxic goitre.[60 43 44 45 51 8] Coller[10 11] recorded several patients with cardiac abnormalities of rate and rhythm who had a goitre but a normal basal metabolic rate Thyroidectomy abolished the cardiac abnormality without affecting the basal metabolic rate. Levine, Cutler, and Eppinger[32] have again emphasised that "not all the effects of the thyroid gland on the heart can be measured in terms of basal metabolism" They quoted F N Wilson who observed transient auricular fibrillation in patients with a normal metabolism and no goitre, but who later had a raised basal metabolic rate and a palpable goitre

We are here more concerned with a relation between thyroid toxæmia and high blood pressure which has received less general recognition. There is a characteristic group of patients with hypertension combined with thyrotoxicosis. In 1919 Riesman[56] mentioned a variety of "non-goitrous thyrotoxic hypertension" occurring mainly in women about the menopause. His patients had neither a goitre nor exophthalmos, yet they were emotional and had palpitation, sweating, tremor, tachycardia, and both a systolic and diastolic hypertension. Gallavardin[18] mentioned this thyroid factor in patients with high blood pressure, for he thought that the tachycardia might mask the diastolic hypertension Then Mannaberg[39] wrote of the frequency of tachycardia in hypertension uncomplicated by heart failure He cited its special preponderance in women and indifference to digitalis, the concomitant sweating and glycosuria, a rise in the basal metabolic rate, and the not infrequent presence of a goitre as good evidence for its thyrotoxic origin.[40] The few prior opinions in the literature upon the source of tachycardia in high blood pressure had been that it was due to heart failure.[36 46] Kerpolla[27 28] found thyroid enlargement in one quarter of his female hypertensive patients, and of these about half had symptoms of exophthalmic goitre or thyrotoxicosis. Later Boas and Shapiro[4 5] described a small series of cases, like Riesman's, in which high blood pressure was associated with a raised B M.R., and with tachycardia, nervousness, loss in weight, and pigmentation But like Riesman they stressed the absence of a goitre and exophthalmos and remarked the absence of asthenia and tremor They thought that these patients form a separate group to be distinguished not only from ordinary hypertensive cases but from goitre Laufer[30] recorded four cases in which a goitre with a raised basal metabolic rate was associated with high blood pressure; and Glatzel[illegible] described others

Some writers have looked upon the symptoms and signs we are ascribing to thyrotoxicosis as nothing more than products of hypertension itself or of hypertensive heart failure—a post instead of propter relationship we cannot accept. Hamilton and Beck[illegible] thought that hypertension may simulate all the symptoms of increased thyroid activity, even to the raised basal metabolic rate. Others[53] have been doubtful whether these symptoms were thyroidal or not In a recent paper Kisch[29] thought that the special features of this group were to be attributed to heart failure and were really not due to thyrotoxicosis. He mentioned that they might also occur in failure from causes other than hypertension such as valve lesions He also stated that the iodine content of the blood is not raised as it would be in exophthalmic goitre. These propositions appear to us wholly insufficient to disprove that the thyroid is a guilty participant. He fails to account for the frequency of a goitre in such patients, and as Mannaberg[39] rightly maintained, they often show tachycardia for years without heart failure.

ANALYSIS OF CASES

Our series consists of 100 patients who have been observed at hospital or in private practice during the last four years. All of them had established hypertension which in most was observed for many months The salient features which emerged from the clinical analysis are given in Tables I to IV.

TABLE I.—*Thyrotoxic Hypertension*

Analysis of 100 patients with established hypertension combined with a goitre, tachycardia or fibrillation, and general evidence of chronic thyroid toxæmia

Sex ..	Females	91	
	Males	9	
Ages .	Under 40 years	6	cases
	41 to 50 ,,	26	,,
	51 to 60 ,,	42	,,
	61 to 70 ,,	24	,,
	Over 70 ,,	2	,,

PREVIOUS PRESENCE OF A GOITRE IN 68 CASES

Duration	For 1– 5 years	20	cases
	,, 5–15 ,,	13	,,
	,, 15–45 ,,	33	,,
	Doubtful	2	,,

Previous thyroid toxæmia (including exophthalmic goitre).

Present in	32	cases
Absent in	16	,,
Doubtful in	20	,,

Previous thyroidectomy in 6 cases ; though 5 subsequently thyrotoxic

There were 91 females and 9 males. This striking disproportion is in contrast with what is usual in essential hypertension for there is generally only a moderate preponderance of females,[67 57 58 16] or none at all[17] The ages ranged from 22 to 74 years but all except 8 were between 41 and 70 years

There was a previous history of a goitre in 68 cases, and in 33 of these it had been present for more than 15 years. In 32 there was good evidence that thyrotoxicosis had proceeded from the goitre in the past. Six had undergone a partial or subtotal thyroidectomy, but 5 of these had subsequently been thyrotoxic.

An analysis of the important symptoms is given in Table II Dyspnœa and palpitation were the main cardiac symptoms, and in 23 the latter was based on auricular fibrillation—paroxysmal in 10 and permanent in 13 Symptoms referable to thyrotoxicosis were present in 94 patients, and of these the most important were weakness loss of weight, nervousness, and tremor A highly strung temperament, admitted by the patient, had significance Local symptoms due to the goitre were uncommon, obstructive dyspnœa was present in 5, and dysphagia in 5

TABLE II —*Thyrotoxic Hypertension*

Analysis of 100 *patients (continued)*

MAIN SYMPTOMS

(1) *Cardiovascular*		
Dyspnœa		53 cases
Palpitation		
Simple		59 ,,
Auricular fibrillation		23 ,,
Permanent	13	
Paroxysmal only	10	
Angina of effort		5 ,,
(2) *Thyrotoxic*		
Weakness		63 cases
Loss of weight		50 ,,
Nervousness		16 ,,
Tremor		19 ,,
Sweating		9 ,,
Obstructive dyspnœa		5 ,,

All the patients in the series had established hypertension of not less than 160 mm Hg systolic In 80 the diastolic pressure was 90 mm Hg, or more In those with auricular fibrillation, difficulty sometimes arose in deciding whether to admit a patient to the series Blood-pressure readings in fibrillation cannot compare for accuracy with those taken during normal rhythm, so we never accepted these as evidence in that small proportion seen only during fibrillation unless convincing figures were obtained

TABLE III —*Thyrotoxic Hypertension*

Analysis of 100 *patients (continued)*

EVIDENCE OF HYPERTENSION

(1) *B P (mm Hg)*		
Systolic	160–200	69 cases
	200–240	24 ,,
	Over 240	7 ,,
Diastolic	Below 90	11 ,,
	90–110	60 ,,
	110–130	23 ,,
	Over 130	6 ,,
(2) *Radioscopic*		
Enlargement of left ventricle		64 cases
Uncoiling of aorta		50 ,,
(3) *Electrocardiographic*		
Left ventricular preponderance		44 cases

THYROID ENLARGEMENT

Great	2 cases
Moderate	31
Slight	62 ,,
None (previous thyroidectomy)	2 ,,
General	86 ,,
Adenomatous	17 ,,
Chiefly substernal (X ray)	11

The distribution of the cases in relation to the height of the blood pressure is shown in Table III, and in relation to the pulse pressure in Table IV These figures show that the special effect of thyrotoxicosis on blood pressure is often to be seen with the pulse pressure unusually large In 19 patients the pulse pressure was actually greater than the diastolic pressure

The association of tachycardia with the hypertension was a striking feature and more than merely coincidental In 7 it was ascribed to congestive heart failure, but in 66 of the remaining 93 patients a persistent tachycardia (i e, pulse rate over 90 per minute) prevailed although failure was absent The tachycardia was slight (i e, less than 100 per minute) in 21, moderate (i e, from 100 to 120 per minute) in 36, and marked (i e, over 120 per minute) in 9 There was collateral evidence of thyroid toxæmia in all these cases, and we are sure that tachycardia persisting for long periods in patients with hypertension, yet unaccompanied by heart failure, evidences a thyrotoxic factor

Extrasystoles were noted in 14 patients and confirmed by electrocardiogram in 10, they were of the ventricular type in 7, auricular in 2, and nodal in 1 Six of these cases had tachycardia also, with a pulse rate higher than 90 per minute The incidence is not unusually high so that extrasystoles in the presence of a high rate have little or no significance as an index of thyrotoxicosis when there is hypertension

TABLE IV —*Thyrotoxic Hypertension*

Analysis of 100 cases (concluded)

EVIDENCE OF THYROTOXICOSIS

(1) *Symptoms*—High incidence of weakness, loss of weight and nervousness of the type expected with thyroid toxæmia

(2) *Physical signs*		
(a) *General*		
Nervousness		76 cases
Fine tremor		73 ,,
Sweating or flushing		39 ,,
Wasting		36 ,,
Exophthalmos		30 ,,
(b) *Cardiovascular*		
Tachycardia (pulse rate over 90 *7 cases* excluded because of heart failure)		66 cases
High pulse pressure		
90–110 mm Hg		36 ,,
Over 110 ,,		15 ,,
Auricular fibrillation		23 ,,
Permanent	13	
Paroxysmal	10	
(3) *Radioscopy* (apart from enlargement of left ventricle in 64 cases)		
General enlargement of heart		23 cases
Enlargement of pulmonary artery		18 ,,

Twenty three patients in the series had auricular fibrillation: in 13 it was permanent and in 10 paroxysmal This high incidence in a series of hypertensive patients is opposed to the usual retention of normal rhythm even when heart failure has supervened Gallavardin[14] and Parkinson and Clark Kennedy[15] have emphasised this normality of rhythm in ordinary hypertensive heart failure The latter found fibrillation to supervene before death in 3 only of a group of 23 hypertensive patients with heart failure and in one of these exophthalmic goitre was associated White and Jones[16] found the incidence to be only 13 per cent in an unselected series of [illegible] cases, and it is possible that they may have included patients who would now be thought to fall into our special group Here the high incidence is attributable to thyrotoxicosis, and its importance is in relation to the [illegible] induction of heart failure Failure was present in 7 out of 100 cases, and 5 of these had permanent au-

1 paroxysmal fibrillation. The effect of fibrillation was also shown by the left auricle which was seen to be enlarged (radioscopy) only when auricular fibrillation had been present for some months. As fibrillation was related to thyroid toxæmia in these cases, the contention of many that thyrotoxicosis itself does not lead to permanent changes in the heart is decidedly weakened. This enlargement of the left auricle was seen in 11 cases, 10 with permanent and 1 with paroxysmal auricular fibrillation. None had mitral stenosis, and rarely if ever was the auricular enlargement so disproportionate as in this condition. In two of three others who had established fibrillation without enlargement of the left auricle, the fibrillation was recent. In nine others who had paroxysmal auricular fibrillation without enlargement of the left auricle, the attacks had been infrequent in all but two.

There was other evidence on radioscopy both of hypertension and of thyroid toxæmia (cardiac). In 64 there was enlargement of the left ventricle, and in 59 this was accompanied by uncoiling of the aorta. As is now recognised, hypertension produces an uncoiling or separation of the limbs of the aortic arch, as seen in the left oblique position by X rays. The changes due directly to the goitre were shown by enlargement of the heart as a whole in 29, and of the pulmonary artery in 18, in 33 cases one or the other of these was present. In addition, there were the indirect effects of auricular fibrillation already mentioned These observations show that the character of the cardiac enlargement in these patients is determined both by the hypertension and by the goitre, though the former predominates.

General signs of thyrotoxicosis were present in 86 out of the 100 patients, and their relative frequency and character are given in Table IV The commonest were emotional unrest and nervousness of the type expected with thyroid toxæmia, fine tremor, sweating or flushing, wasting, and exophthalmos. All these signs were present in 30 cases and at least 2 of them were found in 81; in the others the evidence of thyrotoxicosis was partial These cases are exactly comparable with the "masked" cases of ordinary hyperthyroidism, and they emphasise the frequency with which such incomplete forms occur. In 14 patients general thyrotoxic signs were absent; but in addition to a goitre, 4 of these had paroxysmal auricular fibrillation, and in 4 the history of chronic goitre ranged from 14 to 40 years. Every patient in the series had enlargement of the thyroid gland except two who had undergone a previous thyroidectomy In 62 the enlargement was slight, in 34 moderate, and in 2 only was it great. The enlargement was general in 86, 4 of whom had adenomata in addition; the enlargement was purely adenomatous in 17 Eleven had a retrosternal goitre disclosed by X ray examination.

DISCUSSION

The evidence presented in this paper shows that ruling features of thyrotoxicosis are often met in hypertensive patients. Without adducing other evidence, the association is sufficiently common to arouse suspicion that long-standing thyrotoxicosis may be one of the causes of essential hypertension. However that may be, such thyroidal patients are to be separated from the general group of essential hypertension, if not ætiologically, then certainly in the sphere of diagnosis and treatment, for the clinical features, course, and treatment are largely determined by the coexistent thyroid toxæmia.

The recognition of this factor must therefore become important in diagnosis. The condition is ten times more frequent in females than in males; it is rare under 40, and most patients are between 50 and 60 years of age. Two-thirds have had a chronic goitre for many years, and at least half of these have also manifested chronic thyrotoxæmia. There may be a history of exophthalmic goitre, supposedly cured or even operated on. Thyroid enlargement, usually slight, may be minimal or doubtful; indeed we have a number of cases, not included in our series, where it has been impossible to demonstrate any enlargement, though the thyroid element could not be denied. In some that are included enlargement of the thyroid gland has been present many years though disregarded or even denied. Yet one is convinced by the tachycardia, thinness or wasting, the thyroid temperament with its energy and restlessness, a fine tremor, and other general evidence of thyroid dysfunction. Moreover, the character of the cardiac enlargement often shows the influence of the goitre in addition to that of hypertension. It determines auricular enlargement, for instance, by way of auricular fibrillation. Sometimes only two or three typical signs of thyrotoxicosis are present, and such cases fall into the group of "masked hyperthyroidism" but here involving hypertension

These combined features in patients with hypertension justify their separation into a clinical group with a distinctive prognosis and treatment. Besides the added burden of general symptoms emanating from the toxic thyroid, these patients are prone to auricular fibrillation (23 in 100) which antedates the congestive heart failure which would eventually be expected in hypertension. Indeed, whenever auricular fibrillation occurs in a patient with hypertension, goitre is now to be suspected as a likely cause. We would go further, there are patients with auricular fibrillation resulting from a chronic goitre who have no hypertension when first seen, yet in whom its previous existence can be deduced from the radiological appearances of the heart and aorta

Recognition of the thyroid factor influences treatment in important ways. Rational therapeutics must be discriminating. Iodine or iodide is often administered for hypertension itself, but the routine use of these remedies will have to be considered in a new light when thyrotoxicosis affects a hypertensive subject. If iodide is used it will be with the knowledge that it may be influencing an abnormal thyroid gland; it is even possible that where it was thought to be of value in high blood pressure, a thyroid was in fault Thyroid extract and remedies containing it will be contra-indicated for these particular patients Most of the proprietary tablets or fluid preparations of endocrine glands contain thyroid extract, to which indeed they owe their potency, yet the fact may be forgotten that such may aggravate the toxæmia A similar warning has been given by Riddoch[55] against the use of thyroid at the climacteric with hyperthyroidism however minor.

The question of operation arises for the relief of symptoms and the prevention of auricular fibrillation and consequent cardiac failure. Crile[12] in 1923 wrote that "this correlation of high blood pressure with hyperactivity of the thyroid is sufficiently well established to lead to operation in hypertension and myocarditis where the only evidence of thyroid involvement aside from these is the presence of a goitre" He mentioned that operation is sometimes followed by a marked fall in blood pressure. Tinker recorded the results of operation in 11 cases in all of whom the systolic blood pressure was greater than 200 In all there was immediate and striking improvement, and in three the blood pressure fell to 150 or less The late results, though less convincing, showed that about a third of his cases were improved over a period of three years' observation Else[15] also thought subtotal thyroidectomy advisable because of the additional risks from the thyroid factor in hypertension He found that the blood pressure though usually reduced rarely returns to normal because of damage already done Chesky[9] however, found no benefit and so did not advise operation Rosenblum and Levine[59] recently reported the late results of subtotal thyroidectomy in a series of cases of hyperthyroidism with significant heart disease In 23 hypertensive cases with an average systolic blood pressure of 179 mm Hg, and diastolic of 80 mm Hg, before operation, there was no change in the pressure three years after operation though there was often great improvement in respect of heart failure or anginal pain In our series subtotal thyroidectomy has been done in 16 of the 100 patients, often with amelioration of symptoms and fall in pulse-rate, though its effect on blood pressure and its permanent value cannot yet be judged

CONCLUSIONS

(1) The term thyrotoxic hypertension is applicable to a group of patients with hypertension in whom there are ruling features of thyrotoxicosis, especially tachycardia, with a chronic goitre which has often been overlooked.

(2) These patients are usually women between the ages of 45 and 65 years; they are thin, excitable and easily tired The tachycardia is 90–110, the systolic blood pressure is between 170–240, often with a low diastolic figure (high pulse pressure) Paroxysms of auricular fibrillation may be followed by permanent fibrillation The dual influence of goitre and hypertension appears in the radiocardiogram

(3) Enlargement of the thyroid gland may be minimal, even doubtful, occasionally it is substernal Masked hyperthyroidism has already been related to myocardial disease, it is now seen to figure in relation to hypertension In any patient with hypertension showing tachycardia, and still more if there is auricular fibrillation with or without cardiac failure, the thyroid gland should be examined most critically and supporting evidence of thyrotoxicosis should be sought

(4) Thyrotoxic hypertension calls for special consideration in treatment Thyroid extract is contra indicated If iodine or iodide is used for hypertension its possible effect on an abnormal thyroid will be taken into account Subtotal thyroidectomy will often relieve symptoms, and prevent or dispel auricular fibrillation which so often determines a premature heart failure in hypertension

(5) The frequency of the combination should revive the suspicion that chronic thyrotoxicosis is one of the causes of hypertension (a thyrogenic hypertension)

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SUSSEX MENTAL DEFECTIVES.—Three years ago the Brighton corporation acquired for £10,000 Laughton Lodge near Ringmer, a two-storeyed mansion with 135 acres of land including a well-timbered park. For some time a number of male adult patients have been accommodated there, and are being employed in the workshops, kitchen or garden, which provides all the fruit and vegetables for the establishment. Arrangements are now being made to accommodate [illegible] patients and it is hoped that ultimately the number will be increased to [illegible]. Patients are to be received from the Eastbourne and Hastings corporations and the East and West Sussex county councils. It is planned to have one section of the colony for male patients and another for female patients and children, while the administrative buildings and workshops will form a third group. A site for the erection of a nurses' home [illegible]

A GASTRIC LESION PRODUCED BY AN EXTRACT OF THE PITUITARY GLAND

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The following preliminary report describes some new properties associated with an extract of the pituitary gland. The preparation was made by the acetone-picric acid process as described by Dodds and Dickens[1] The same quantities of reagents in relation to weight of wet tissue were employed as in the preparation of insulin from pancreas From each kilogramme of gland an average of between 2–4 grammes of hydrochloride was obtained in the form of a readily water-soluble, white, non-deliquescent powder

If 150 mg of this substance be dissolved in 1 c cm of water and the resulting fluid be injected subcutaneously into a rabbit (2–3 kg) the following symptoms are observed. The animal at first is prostrated Respiration is shallow and rapid, and the heart-rate is accelerated In most cases after about three hours these symptoms disappear and the animal returns to a normal condition Occasionally death supervenes For the next seven days it partakes of practically no food and loses weight rapidly The fæces are dark coloured and have the appearance of containing altered blood. After 7–10 days the animal recovers completely Its appetite returns and it rapidly gains weight

If the animal be killed 15 hours after injection, on post-mortem examination it will be noticed that whilst the other organs appear normal it is obvious that the stomach, even from the exterior, shows a severe gastritis If the stomach be removed and slit down the greater curvature, the food washed out, and the mucous membrane be examined, a remarkable appearance presents itself The œsophagus duodenum, and the distal third of the stomach appear normal The fundus, however, presents a dark mottled red appearance with a fibrinous exudate on the surface The stomach wall in this *region is frequently œdematous*, and the whole appearance is similar to that seen in cases of corrosive poisoning by mouth It is significant that the lesion is only present in the acid-secreting area of the stomach This observation has been repeated some 40 times with the same finding in each case In some animals the lesion is so severe as to suggest that the whole of the mucosa of the acid-bearing area has become necrotic and has been replaced by a hæmorrhagic sloughing mass. Bearing in mind that this occurs within 12–15 hours of the injection the most significant facts are the sharp demarcation of the affected area together with the complete absence of lesions in other parts of the alimentary tract In most animals the liver and kidneys appeared to show signs of a toxic effect. These were not invariably present, whereas the gastric lesion was present in all cases

Similar effects were found when the material was injected into mice, rats, and guinea-pigs In these animals the acid-bearing area of the stomach was again picked out

A number of control observations have been made by employing the acetone-picric acid process to obtain extracts of ox liver, spleen, kidney, brain and muscle, and human placenta The resulting hydrochlorides have been injected in doses of 150–500 mg into rabbits under the same conditions as previously described. In all cases a negative result has been obtained It is interesting to note that the toxic changes in kidney and liver have been frequently observed in these control experiments, thus indicating that the gastric effect is not of necessity associated with the effect on kidney and liver This is the more significant when it be remembered that a toxic effect on the kidney and liver is not always associated with a gastric lesion. It has been shown that the active material is concentrated in the posterior rather than the anterior lobe

The problem at once arises whether this phenomenon is due to some new gastrotoxic substance or to a hitherto undiscovered property of the known hormones of the posterior lobe. Preparations of the oxytocic and pressor hormones were obtained according to the method of Kamm et al ,[2] and it was found that when 650 units of the oxytocic principle were injected subcutaneously into rabbits the result was negative In another experiment in which 700 units were employed there was a very slight reddening of the gastric mucosa. It would appear therefore that the gastrotoxic factor is not associated with the oxytocic principle Similar experiments were performed in which the pressor factor was administered to animals in doses varying from 150–680 units In these *animals* there was a definite change in the stomach mucosa of varying intensity A mixture of the oxytocic and pressor factors, 600 units of each, when injected into an animal resulted in very slight changes in the stomach. From this it would appear that the gastrotoxic factor has been removed by the process of Kamm et al from the oxytocic hormone but was present in the pressor factor

A series of animals were injected with the standard B P. extract of the posterior lobe Doses varying from 200–800 units were administered In all cases there were very severe gastric lesions indicating that the gastrotoxic substance was present in the material in a considerable concentration Oral administration of 600 units produced an intense lesion of the acid-secreting mucosa in ten hours It must be remembered that the doses employed by us were so great that the amount of gastrotoxic factor contained in ordinary clinical doses would appear to be negligible

CONCLUSIONS AND SUMMARY

The posterior lobe of the pituitary is found to contain a substance capable of inducing a severe lesion of the acid-bearing area of the stomach. This is efficacious when injected subcutaneously, and it is also contained in the standard B P extract of the posterior lobe This extract is active by mouth. The oxytocic principle even in massive doses will not produce a lesion, whilst the pressor factor in similar doses has a definite action Although it would appear that the gastrotoxic factor may be a substance differing from the other two hormones of the posterior lobe a definite statement cannot be made until it has been further purified At present it is impossible to state whether the substance in smaller quantities plays a physiological role, nor is it possible to state its mode of action It seems that either the substance has a direct toxic action on the cells of the acid secreting area of the stomach or perhaps it stimulates secretion of hydrochloric acid to a damaging extent Intensive investigations are being performed on the chemical nature and mode of action of this interesting compound

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* Working with the Ellen Mickle Fellowship from the University of Toronto

† Working with a grant from the Medical Research Council.

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THE ANÆMIAS AND THEIR TREATMENT *

By L J Witts, M D Manch F R C P Lond

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So much has been spoken and written on the anæmias in recent years that I have decided not to attempt to review the subject, but to try to draw a few simple conclusions or general ideas from the very interesting work which has been done I propose to open this discussion by referring to three papers published independently in 1926, which contained the germ of most of the subsequent achievements

THREE GENERAL PRINCIPLES

In the first of these papers Werner and Kaznelson of Prague, described the changes in the bone marrow in the disease we now know as idiopathic hypochromic anæmia They showed that the bone marrow was hyperplastic and contained an excess of normoblasts, which decreased after the administration of iron, which is a specific remedy for the disease They were much surprised at these findings, as clinically there was no evidence of excessive blood destruction and they had expected to find a hypoplastic marrow They suggested that the only explanation was a disturbance in the maturation of erythroblasts into erythrocytes, with a consequent accumulation of normoblasts in the bone marrow in the florid stages of the disease The conception of anæmia due to *disturbance in the maturation of the red blood cells* is now a familiar one, but at the time it was extremely novel, for it had previously been almost an axiom that a red bone marrow meant increased blood destruction, and that diminished blood formation must be attended by a hypoplastic marrow

In the same year Minot and Murphy, of Boston, reported the "Treatment of Pernicious Anæmia by a Special Diet" establishing the curative effect of liver and describing the reticulocyte crisis which occurs on the inception of treatment Peabody, also of Boston had published the first of his studies of hyperplasia of the bone marrow in man in 1926 and the second appeared in 1927, shortly before his untimely death He showed that the hyperplasia of the marrow in pernicious anæmia was most marked during relapse and that the structure of the marrow tended to return to normal during the remission He explained the anæmia of the relapse by the functional ineffectiveness of the bone marrow which resulted from the failure of the megaloblasts to differentiate towards mature erythrocytes, and suggested that the striking clinical results obtained by the prescription of liver were due to some factor in the liver, which affected cell metabolism and promoted the development and differentiation of mature red blood cells His work may be summarised in a second conception, that a disturbance in the maturation of the red blood cells in the bone marrow and consequent anæmia may be produced by a *defective supply of hæmatinic factors to the bone marrow*

The work of these pioneers forged a strong link between hæmatology and the science of nutrition and the subsequent experiments of Castle showed the intimate connexion between hæmatology and gastro enterology Castle, like many other physicians was impressed by the constancy of achylia gastrica in pernicious anæmia and by the evidence that the natural or artificial abolition of the normal gastric secretion could precipitate the onset of the disease In a series of brilliant experiments he showed that a healthy diet contains an "extrinsic factor," which is acted on by an "intrinsic factor" present in normal gastric juice to produce the substance effective in pernicious anæmia, which is then stored in the liver Substitution therapy in pernicious anæmia may therefore be practised either with desiccated stomach or with liver Castle described pernicious anæmia as a "conditioned deficiency" inasmuch as the defective supply of hæmatinic factors to the bone marrow was the result of alimentary disorder and not of any absolute fault in the diet The conception of *conditioned deficiencies* is the third general principle which I wish to bring to your notice

The exact nature of the extrinsic factor has not yet been discovered It is present in most first class proteins and especially in yeast, but it is not vitamin B, as Castle had at first concluded (Lucy Wills) The active principle present in stomach is distinct from pepsin and from the active principle of liver (Klein and Wilkinson) and in the pig Castle's intrinsic factor appears to be produced by the pyloric glands, in contrast with pepsin rennin and acid which are produced by the body of the stomach (Meulengracht) It is probable that intrinsic factor is also produced by the cardiac end of the stomach, and indeed otherwise one would expect post operative Addisonian anæmia to be more frequent than it is to day Examples of anæmia due to defects in the diet are the nutritional anæmia of infancy and tropical nutritional anæmia while the most important anæmias due to conditioned deficiencies in addition to pernicious anæmia are sprue and idiopathic steatorrhœa In other forms of anæmia the ætiology may be more complicated In idiopathic hypochromic anæmia achlorhydria defective diet and reduction of the iron stores by menstruation and pregnancy may all play a part, whilst in ankylostomiasis the factors seem to be defective diet achlorhydria intestinal malfunction and hæmorrhage

INHIBITED MATURATION OF ERYTHROCYTES

Since 1926 the nutritional aspects of anæmia have preoccupied the attention of clinicians and research workers, but the first fruits of this field have quickly been gathered and attention is now turning to the way in which the maturation of the red blood cells may be inhibited by infection and other agencies The effects of infection on the erythron are complex In addition to the destruction of red cells by bacterial toxins and by the increased wear and tear of the febrile state, are the degenerative changes which affect all the tissues and have [illegible] reason to spare the bone-marrow, infection has a definite inhibitory effect upon the utilisation of iron and of the pernicious anæmia factor, which is clinically very similar to the inhibition of the action of insulin by infection in diabetes mellitus.

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* Introducing a discussion at the Medical Society of London on Oct 22nd 1934

The inhibition of the maturation of the red cells by infection is most clearly seen in syphilitics artificially inoculated with *malaria*, though it is also well shown in the natural disease (Fairley and Bromfield, Power) After a transient erythrocytosis there is a progressive anæmia of moderately high colour-index and a slight increase of bilirubin in the serum; in the experimental infections there is no increase in reticulocytes, though in the natural disease a moderate reticulocytosis is usually present. The anæmia appears to be out of proportion to the amount of blood destroyed by the parasites and to be aggravated by a reduction of blood formation The marrow, however, is not hypoplastic, in fact it is redder than normal. On the exhibition of quinine and the death of the parasites there is a prompt reticulocyte crisis and the anæmia is steadily repaired. There is thus no shortage of hæmatinic principles but the organism is unable to utilise them while the infection is present, and the prescription of remedies such as iron and liver is without effect on the anæmia of active malaria Similar phenomena have been noted by Fairley in the anæmia due to amœbic abscess of the liver

A peculiar and characteristic form of anæmia, which occasionally follows the *metastasis of malignant growths* in the skeleton and less commonly appears in other forms of bony disease, has been closely studied by Vaughan and Turnbull, who have renamed it leuco-erythroblastic anæmia The cardinal feature of this form of anæmia is not its severity—for it may be relatively mild—but the appearance of immature leucocytes, nucleated red blood-cells and an abnormally high percentage of reticulocytes in the circulating blood The anæmia cannot be explained by hæmorrhage or blood destruction, and the reticulocytosis appears to be due to some fault in the process of blood formation rather than an accelerated delivery of new cells into the circulation In spite of the presence of the secondary deposits, the total amount of erythropoietic marrow is probably not reduced, and may indeed appear to exceed the normal Secondaries in areas normally occupied by fatty marrow either are embedded in deep red marrow or have a zone of such marrow around them, and zones of myeloid transformation may surround secondaries in other organs All this is evidence of a fruitless hyperplasia or dysplasia of the erythron, comparable with the changes in pernicious anæmia Hæmatinic remedies such as liver and iron are without influence on leuco-erythroblastic anæmia Vaughan and Turnbull suggest that the cancer cells deprive the hæmopoietic cells of necessary food factors, and whether the mode of action be deprivation, irritation, or inhibition of these cells, the anæmia is obviously due to a disturbance in the maturation of the red cells

Another striking maturational anæmia is the anæmia produced by the ingestion of *radium* salts, which was described by Martland in girls painting the dials of luminous watches The radium is sequestered in the bones and produces much the same changes in the marrow as the neoplastic deposits in leuco-erythroblastic anæmia But enough examples have been given to show that in addition to the anæmias due to increased destruction of blood, as from hæmorrhage and hæmolysis, and the anæmias due to aplastic changes in the marrow, as from chemical and biological poisons, there is this third and most important group due to disturbances in the maturation of the red cells. Although the marrow may be anatomically extensive, it is functionally ineffective, and few cells are delivered into the circulation The cause is most often an insufficie supply of the raw materials for blood formatio either from faulty diet or from alimentary disea but in other instances, although the raw materi are supplied in abundance, their utilisation is inhibit by infection, toxic substances, or malignant disease

OR OF LEUCOCYTES

Side by side with the erythron is the compl tissue constituted by the leucocytes and the myelo cells from which they arise The life of the pol morphonuclear cells is short and their numbers a constantly being depleted by emigration from t circulation Losses are made up by the proliferati of cells in the bone-marrow which develop a multiply through the stages of myeloblast and myel cyte to produce fresh supplies of active polymorph nuclear cells The production of white cells in t marrow and their release into the circulation mu also be influenced by chemical principles, and t discovery of this mechanism has become a matter immediate importance, owing to the appare increase in frequency of agranulocytosis or essenti neutropenia The cardinal feature in this disea is a marked reduction in the total number of whi cells in the blood and a special reduction in t number of polymorphonuclear cells, which ma practically disappear. In the absence of the cellul defences of the body the mucous surfaces of t body are liable to be invaded by the bacteria whi are always present there, and a variety of serio lesions may develop In a number of cases it ha been clearly shown that the leucopenia precede any evidence of infection, and chronic and relapsi types of the disease have been recognised Th leucopenia is not the result of infection but the caus

It has long been known that a leucocytosis can produced by the injection of nuclein. The leucocyt which die in the circulation must yield nucle derivatives, and nucleotides are normally prese in the blood, so that it is natural to conclude th nuclear derivatives may be one of the physiologic agents concerned in leucopoiesis and leucocytos Confirmation has come with the discovery of t value of nucleotides in cases of agranulocytosi It is interesting to see how closely the respon to the injection of nucleotides in agranulocyto resembles the reticulocyte crisis in pernicious anæmi "The sequence of events as the earliest myelo cells appear, only to be supplanted each in turn b succeeding generations of more mature cells, unfol the life-cycle of the neutrophilic myelocyte an leucocyte quite as completely as it is revealed i histologic studies of regenerating bone-marrow" (Doan) At the beginning of nucleotide treatme there is often a myelocyte crisis, reaching betwee 10 and 20 per cent, and this is accompanied an followed by a steady increase in the number of polymorphonuclear cells, which are at first of an immatur type.

The leucopenias are more difficult to study tha the anæmias, for cases are relatively uncommon and the patients are usually too acutely ill for clinica experiment It is probable that essential leucopeni will prove to have as complex an ætiology as t anæmias due to disturbances in the mature of the red cells, and it is certain that not all cas respond to nucleotide therapy. Fairley and Scot recently described a chronic relapsing case in which death occurred in spite of thorough treatment with nucleotide Bowen Davies has reported the agranulocytic syndrome in a young man with idiopathic steatorrhœa, there was no response to nucleotide, but recovery with a normal white count on injection of liver Nevertheless the same general principles apply as in diseases of the erythron Leucopenia may be brought about by a disturbance in the maturation of the white cells The marrow may be functionally ineffective, even though anatomically there is a normal amount of leucopoietic tissue The normal maturation of white cells and their delivery into the circulation may be induced by supplying the appropriate chemical principles

Liver and nucleotide, which are so essential to the normal development of the blood cells appear to be harmless in excess and cannot be used to produce erythræmia and leukæmia It is apparent however, that we are steadily gaining knowledge of the factors which control the growth of tissues, and the advances in hæmatology can be paralleled by the contemporaneous discovery of simple chemical substances among the vitamins and the endocrines, which powerfully influence the growth and development of tissues There are few places in which the relation between *nutrient factors and* orderly tissue development can be seen so clearly as in the hæmopoietic system, and the general principles which have been established there may prove to have a wider application

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AN INVESTIGATION OF THE RESULTS OF SPLITTING THE KIDNEY

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THE operation of splitting the kidney has been much criticised, and Graham Simpson[1] has lately stated that he is opposed to it on the following grounds (1) the risk of severe hæmorrhage a few days later, (2) the doubt whether the damaged organs are of much use afterwards, and (3) the risk of missing an early growth

This paper is an attempt to assess the immediate value and final results of operations which involve splitting the kidney along its convex border in the bloodless plane of Hyrtl, it includes only those cases in which the kidney has been incised along two thirds or more of its convex border An operation of this type is not often performed for usually a smaller incision will suffice and it was carried out in only 17 cases at St Thomas's Hospital during the ten-year period 1924–1933, the indications being (1) inability to deliver and expose the renal pelvis, (2) difficulty in locating a small calculus, (3) inability to remove a large branched calculus through a small incision, and (4) exploration of the kidney for hæmaturia The operation attained its immediate object in all but one case, in which the calculus was not found until nephrectomy three weeks later In two other cases no calculus was found, but radiograms taken later showed no shadow in the renal area

It appears therefore that this is a satisfactory method of exploring the kidney for calculus considering that it has only been employed as an alternative to abandoning the search or removing the kidney As a method of excluding the presence of a growth it is open to the criticism that it cannot explore completely the renal substance, but this is applicable to all methods of exploring the kidney except nephrectomy The fact that unexplained unilateral hæmaturia is occasionally due to chronic interstitial nephritis justifies a conservative attitude, and, apart from nephrectomy, splitting the kidney is the most effective means of excluding a growth The value of the operation will therefore depend on the incidence and severity of the complications, and the subsequent value of kidneys which have been split *In this investigation the function of the* kidney has been judged by intravenous pyelography which is assumed to give a fair index of its efficiency compared with the kidney of the opposite side

In the 17 cases the operative mortality was nil and the renal complications as follows —

A There was *hæmaturia* for a short time in all cases Secondary and persistent hæmaturia occurred in three cases in one of these (No 9) the calculus had not been found, and nephrectomy was performed on the twenty first day for severe hæmaturia and pyuria in the other two (Nos 14 and 16) hæmaturia was severe and prolonged, but the patient ultimately made a good recovery and intravenous pyelography shows that the renal function is as good as on the other side

Hæmaturia is thus a definite complication of this operation but as a rule it is transient, and I suggest that even severe secondary hæmaturia does not per se demand nephrectomy and does not indicate gross damage to the kidney During the same ten-year period at St Thomas's Hospital nephrectomy was performed in several cases for secondary hæmaturia following a small incision into the renal substance A possible explanation is that a small incision is made to remove a calculus which is palpable through thin diseased cortex, whereas in most cases in this series a large incision was made into a healthy kidney to remove a small stone Again sutures are more effectively applied to a large than to a small incision

B *Suppuration and secondary hæmorrhage* from the wound occurred in one case (No 4)

C *Persistent urinary fistula* necessitating nephrectomy also occurred in one case (No 17)

A study of the Table shows that the efficiency of the split kidneys as judged by concentration of Perabrodil has not been seriously impaired In three cases (1 3 5) ability to concentrate perabrodil is definitely inferior to that of the opposite side but in two cases (10 14) the split kidney appears to be the more efficient of the two and in one case (6) it is the only kidney functioning In the other six the concentration is about the same as that of the other side The kidney subsequently removed for [illegible] fistula showed only a linear scar over the site of the incision

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[1] Graham Simpson Brit Jour Surg 1934 xxi [illegible]

TABLE SHOWING THE RESULTS OF SPLITTING THE KIDNEY

Case	Disease	Year	Indications for splitting the kidney	Result	Post-operative course	Pyelogram, 1934.
1	Calc L kidney	1924	Exploration through renal pelvis had failed.	Small calc removed.	Subcutaneous abscess on fourteenth day	Secretion of L kidney less than R Upper calices distorted
2	Calc R kidney	1924	Not stated in records	1 big and 4 small calc removed	Uneventful.	Both kidneys secrete equally.
3	Do.	1924	Calc. not palpable in pelvis	Small calc removed	Do	L kidney secretes better than R kidney
4	Do	1925	Pelvis very inaccessible; stone not palpable.	Do.	Suppuration in wound Sec hæmorrhage in wound 16th day. Healed 49th day.	This patient cannot be traced
5	Calc L kidney	1925	Previous unsuccessful exploration of, and needling of kidney at another hospital in 1923 Then told that pain was due to neurasthenia, pain persisted Stone not palpable, pelvis surrounded by scar tissue	Do	Uneventful	L kidney secretes poorly Calices distorted R. kidney secretes well.
6	Calc R kidney	1926	R pyelolithotomy 1924. Pelvis now surrounded by adhesions, stone not palpable	Do	Do	R kidney only secretes. Calices distorted, slight hydronephrosis.
7	Do.	1926	Not stated.	Do	Do	Both kidneys secrete normally.
8	Do	1927	Kidney adherent from previous perinephric abscess	3 calc removed	Suppuration from wound Healed 30th day.	This patient cannot be traced
9	Do	1927	Pelvis explored without result	No calc. found.	Pyuria and hæmaturia necessitated nephrectomy on 21st day Stone found in specimen	Patient ultimately made a good recovery.
10	Do	1928	Do	Small calc removed.	Uneventful	R kidney secretes better than L Calices of R kidney distorted.
11	Do	1929	R uretero-lithotomy in 1928 Pelvis now surrounded by scar tissue, stone not palpable.	Calc removed.	Do	Kidneys secrete equally R pelvis distorted.
12	Hæmaturia	1929	To explore kidney for cause	Nil found Biopsy ch int neph	Uneventful Nephrectomy for recurrence of hæmaturia 6/12 later	Nephrectomy confirmed diagnosis
13	Pain ? calc R kidney	1931	Attacks of renal pain, hæmaturia, and pyuria during one year Doubtful X ray shadow R renal area Pelvis opened, no stone found	Nil abnormal found	Uneventful	Both kidneys secrete well Slight hydronephrosis R No evidence of calculus
14	Calc R kidney.	1932	Large branched calculus, too large to remove through the pelvis	Calc removed	Severe hæmaturia on 14th day, urine clear on 28th day	R. kidney secretes better than L. Calices distorted
15	Calc L kidney	1932	Ureterolithotomy L, pyelolithotomy R, in 1929 X rays show renal calculus Pelvis surrounded by scar tissue.	No stone found	Uneventful recovery Post-operative radiogram No evidence of calc Stone apparently displaced at operation	Both kidneys secrete poorly No evidence of calculus
16	Calc R kidney	1933	Pain in R loin one year, previous investigation in 1932 failed to reveal the cause 1933 examination showed small calculus in kidney Pelvis explored, kidney needled without result.	Small calc removed	Very severe hæmaturia 14th to 42nd day. Hb 30 per cent Since then no urinary symptoms.	Both kidneys secrete equally
17	Calc L kidney	1933	Large branched calculus, too large to remove by pelvis	Removed	Persistent sinus Nephrectomy 6th week	Kidney tissue normal Sinus into lower pole. Incision healed by a thin linear scar

Calc = Calculus Ch int neph. = Chronic interstitial nephritis.

Conclusions—Splitting the kidney is a useful alternative to nephrectomy (*a*) for the removal of a small calculus which cannot be located by a less destructive approach; (*b*) for the removal of a calculus from a kidney whose pelvis is surrounded by scar tissue or adhesions; (*c*) for the removal of a large branched calculus, and (*d*) for exploration in a case of unexplained renal hæmaturia.

The operation does not produce excessive damage to renal function, and the importance and severity of the principal complication, hæmaturia, has been much exaggerated.

I wish to thank the surgeons of St Thomas's Hospital for permission to follow up their cases, and Mr B W Williams for his advice and assistance

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NORTH RIDING TUBERCULOSIS SANATORIUM—The old workhouse at Bedale has been converted at a cost of nearly £7000 into a sanatorium for the treatment of adult cases of tuberculosis in women; has been renamed Mowbray Grange and formally opened by the Hon. Geoffrey Howard, Lord-Lieutenant of the North Riding. The building will accommodate 30 patients and a administrative staff of 10.

AURICULAR FLUTTER

WITH TEMPORARY REVERSION TO NORMAL RHYTHM AFTER SIX YEARS

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AURICULAR flutter with 1 1 block is uncommon and Parkinson and Bedford[1] were only able to find 18 such records, they added two more of their own at rates of 254 and 275 and two others at slower rates during quinidine treatment Reversion to normal rhythm after several years of established flutter is even more uncommon The following case showed both these features

Mrs A had three attacks of rheumatic fever when 6, 8, and 12 years old, and was treated at the Hospital for Sick Children, Great Ormond street She was always short of breath, but managed to lead a fairly normal life till she was 40, when she became much more short of breath She was first seen at the National Hospital for Diseases of the Heart two years later in 1927 with severe congestive failure, considerable enlargement of the heart, and aortic and mitral disease

She was admitted to hospital and her electrocardiogram (Fig 1A) showed auricular flutter with 2 1 block With rest and digitalis she improved greatly until most of the signs of congestive failure had disappeared After that she attended out-patients regularly taking tinct digitalis ♏ 10 t i d A year later she was readmitted and quinidine was given in an attempt to restore normal rhythm, but without success

She was first seen by us in July, 1930, when flutter had been present certainly for three, and probably for five years During her examination she had a paroxysm in which her heart was regular at 230, and though she was distressed she was quite able to move about the room: an electrocardiogram (Fig 1 B) showed this was due to flutter with 1 1 block At times her heart rate was regular and only half this rate (Fig 1 B, lead 3 flutter with 2 1 block), and at times it was very irregular with a varying degree of block.

These attacks were observed on numerous occasions and could generally be induced by sudden exercise when they usually lasted for a few minutes though at times she thought they lasted for two or three hours without intermission They began and ended abruptly and closely simulated paroxysmal tachycardia—indeed on a cursory examination of her electrocardiograms it was possible to mistake her flutter with 2 1 block for normal rhythm, and the 1 1 block for paroxysmal tachycardia She was much distressed and very dyspnœic during the attacks and had some discomfort in the throat and across the chest, passing down both arms If they were only of short duration she could move about the room but became more disabled if they lasted longer Some cyanosis was always present and increased at such times Considering the congestive failure and the size of her heart it was surprising that her incapacity was not much greater Electrocardiograms were taken during five of these attacks at different times (1928–31) and the rates were 228 230 (Fig 2 A) 216 (Fig 2 B), 230 (Fig 1 B), and 212 (Fig 2 C)

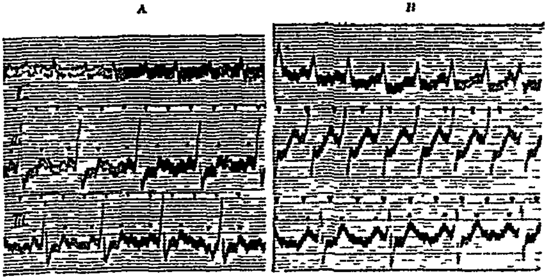

FIG 1 (A) Sept 23rd 1927 regular 2 1 flutter (rate 112) (B) August 15th 1930 leads I and II regular 1 1 flutter (rate 230) lead III regular 2 1 flutter

Because they were getting more frequent and troublesome when we first saw her in 1930 she was admitted to the hospital for the third time

She had a florid complexion with obvious cyanosis suggesting mitral stenosis In the aortic area there were systolic and diastolic murmurs and a systolic thrill and in the mitral area also systolic and diastolic murmurs The shape of the left auricle on radioscopy confirmed the presence of mitral stenosis and the heart was greatly enlarged the maximum transverse diameter being 14 5 cm with a chest width of 21 cm The blood pressure was increased, 170/123 There was some congestive failure, but less than on her first admission as she had taken digitalis regularly During these three years all her electrocardiograms showed auricular flutter the auricular rate varying between 214 and 230

Owing to the congestive failure and the size of the heart it was thought unsafe to try to restore normal rhythm with quinidine but an attempt was made to convert flutter to fibrillation (and so perhaps to normal rhythm) with large doses of digitalis During the first two weeks on [illegible] of digitalis daily her heart was [illegible] than [illegible] three weeks [illegible] the [illegible]

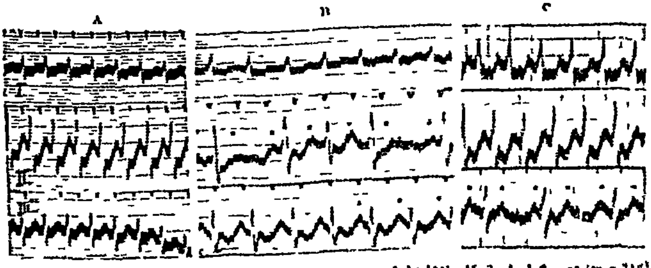

FIG 2—(A) Feb 28th 1930 1 1 flutter (rate [illegible]) (B) July 18th [illegible] with occasional 2 1 block in lead II. (C) March 2nd 1931 1 1 flutter (rate 212) [illegible] 2 1 block in lead III

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[1] Parkinson J and Bedford D E Quart Jour Med, 1928, xxi, 21

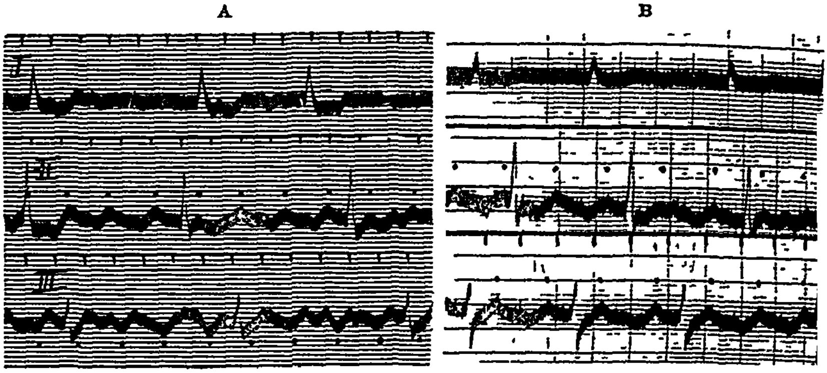

FIG 3 —(A) Sept 26th, 1930 generally 4 1 flutter (rate 55) (B) April 10th, 1931 2 and 3 1 flutter (auricular rate 210)

♏ 80 daily, and during the fourth week again ♏ 60 daily, and her heart became slower, generally with 4 1 block (Fig 3 A), but signs of intolerance to digitalis appeared before fibrillation was induced

Her subsequent progress as an out-patient was fairly satisfactory. at first she took digital. fol gr 1 t i d., but after a few months this was increased to gr 1 q i d, which amount she took almost regularly for nearly two years With the larger dose the failure was less and her heart was generally irregular with varying 2 : 1 and 3 · 1 (Fig 3 B) or 3 1 and 4 1 block, though some 1 1 paroxysms still occurred spontaneously and could generally be induced by sudden exercise All electrocardiograms during these two years showed auricular flutter, but the auricular rate seemed to be getting a little slower: 1927–29, 216–230, 1930, 208–230, 1931, 206–212, 1932, 194–197.

Up to and during March, 1933, the rhythm was always auricular flutter On April 7th it was normal rhythm at a rate of 76 with coupled extrasystoles (similar to Fig 4 B taken later) Congestive failure was present and the œdema of her legs was more than usual but she felt about the same She had been taking digital fol gr 1 q i d, so this was reduced to t i d On April 21st the electrocardiogram was not easy to decipher, but it was almost certainly normal rhythm with very frequent extrasystoles of different types, her digitalis was therefore omitted and she was admitted to hospital for closer observation

An electrocardiogram on April 28th showed normal rhythm without any extrasystoles (Fig 4 A) The rate was 54 and this rate was generally maintained throughout her six weeks in hospital, though towards the end it was sometimes as fast as 60 or occasionally 72 Regular coupled extrasystoles were observed from time to time (Fig 4 B on May 11th, 1933, though she had taken no digitalis for three weeks) In June as her œdema had not disappeared with rest she was given tincture of digitalis, ♏ 10 t i d, and left hospital much better than she had been for years.

This continued for the first month as an out-patient and she felt much better, but on July 14th auricular flutter had returned Since then treatment with digital. fol gr. 1 q i d—the amount she was taking when normal rhythm returned—has kept her in the moderately satisfactory condition of 1930–32 but has not again restored normal rhythm (October, 1934).

This patient is therefore of interest as showing the following unusual features She has moderate health (but with congestive failure which can be held in check with digitalis), certainly after seven, and probabl after nine years of auricular flutter Generally sh has 2 1 or 3 1 heart-block, but has frequent attack of 1 . 1 block with a ventricular rate of 212–230 After six years of flutter, while she was taking th same dose of digitalis which she had taken regularl for two years, normal rhythm returned and continue for three months

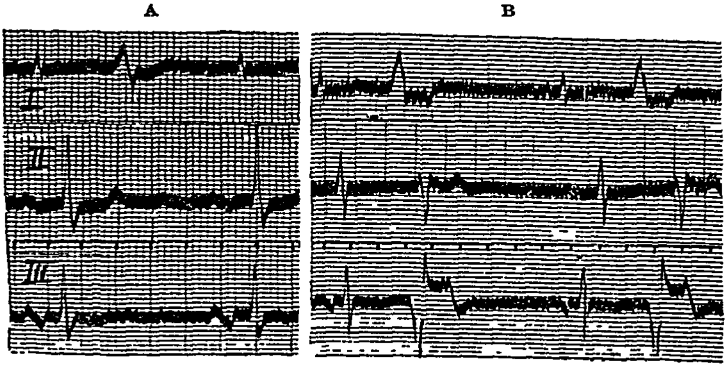

FIG. 4 —(A) April 28th, 1933 return of normal rhythm Note the large partially inverted P-wave in lead III There is an extrasystole in lead I (B) May 11th, 1933. normal rhythm with coupled extrasystoles.

COARCTATION OF THE AORTA WITH INFECTIVE ENDOCARDITIS

By James W Brown, M D, M R C P Lond
PHYSICIAN TO THE GRIMSBY AND DISTRICT HOSPITAL

Since the publication by Abbott[1] of her well known review of 200 cases of coarctation of the aorta interest in this condition has been revived The embryological and pathological aspects have been studied by Evans[2] Radiological studies have been published by Rosler,[3] who was the first to observe the characteristic notching of the ribs, Railsback and Dock,[4] Fray,[5] and Ernstene and Robins[6] Clinical cases have been recorded in some detail by King,[7] Blackford,[8] Thomson and Lamb,[9] East,[10] Ulrich,[11] Evans,[2] Lewis,[12] Stewart and Bellet,[13] and others

In view of this renewed interest in an abnormality which does not now appear to be as rare as was formerly supposed, it is thought desirable to record another case which presents certain features of interest.

History—A married woman, aged 30, complained of shortness of breath on exertion, and recent swelling of her legs Her parents were healthy and presented *no abnormality*. During her life up to this time she denied ever having had any severe illness other than influenza, which she had had about six months previously, and for which she had received no medical attention She had, however, not felt quite so well as usual since that time She had been married for one year, and had had amenorrhœa for three months, but there were no other signs of pregnancy

Whilst yet a girl at school it had been recognised that there was something wrong with her heart, and at 15 years of age her heart lesion was attributed to rheumatism, although there was never any history of a rheumatic infection, or indeed any possible circumstance or symptom that could be assigned to the cause For some years she had been short of breath on exertion, and she had noticed a violent throbbing in the neck at first only made evident by effort, but latterly by any emotional upset In recent months this violent throbbing in the neck had become a source of embarrassment to her had been noticed by her friends, and had made her dread to meet strangers For the last five years she had been unable to walk very far, not only on account of the dyspnoea provoked by exertion, but also because of heaviness, weakness, and pain in the legs similarly caused As long as she could remember she had suffered from cold feet, and yet her hands and arms were always warm Since an attack of influenza six months previously she had never quite recovered her normal state of health She not only felt weaker but she also noticed that her legs had become more and more swollen Coincidently she had become slightly deaf, and her eyes had become more prominent than they used to be These symptoms finally led to her seeking medical advice

Examination—She was a woman of rather slender build, 5 ft 3 in tall, and weighed 7 st Her state of nutrition and muscular development were moderately good She was slightly deaf Her face was rather flushed and the ears cyanotic The eyes were prominent and presented a true exophthalmos The upper extremities were warm and well coloured, and in contrast the lower extremities were cold, bluish, and œdematous A fine tremor of her hands was present The thyroid was symmetrically enlarged Violent pulsation was visible in the carotids, and synchronously with each pulsation the head nodded On inspection of the chest lived pulsation was visible in the subclavian, axillary, and brachial arteries, in the deltoid folds in the external mammary vessels on both sides, and in the superficial epigastric vessels Pulsation was also evident in the intercostal spaces especially on the left side The apex impulse was seen in the sixth space in the axillary line Posteriorly pulsation was visible in the supraspinous fossæ and torturous hypertrophied arteries could be felt and seen in this situation Similar vessels were observed in the interscapular regions and in the intercostal spaces A thrill was palpable over the supraspinous fossæ

The apex beat was heaving and in the sixth space in the axillary line No enlargement of the heart to the right was detected A marked systolic thrill was felt diffusely over the precordium, and was maximum over the upper part of the chest and in the first and second right intercostal spaces It was felt along the subclavian vessels on both sides and in the axillary artery on the right side It was felt also over the right shoulder A loud harsh systolic bruit was heard over the whole chest but it was loudest in the second right intercostal space The bruit was transmitted along the enlarged vessels A loud diastolic murmur was heard in the second right space, and was audible along the left margin of the sternum down to the apex On inspection of the abdomen the epigastric vessels were enlarged and pulsation plainly visible Weak pulsation was felt in the abdominal aorta, and femoral pulsation was only just appreciable No pulsation was evident in the popliteal, tibial, or dorsalis pedis arteries The pulse rate was 120 The blood pressure in the right arm was 180/20, and in the left arm 150/20 Systolic pressure in the legs was 100 mm Crepitations were present at both bases The liver was slightly enlarged but at this stage the spleen was impalpable

A teleroentgenogram (Fig 1) showed a hypertrophied heart with a large left ventricle The aortic knuckle was barely visible Characteristic obvious notching of the ribs due to erosion by the hypertrophied vessels was observed on both sides An electrocardiogram showed a sinus rhythm with marked left axis deviation and a negative T wave in lead I

As a result of these findings an anatomical diagnosis of coarctation of the aorta and a functional diagnosis of congestive failure was made

Subsequent course—Digitalis therapy and rest in bed were instituted The œdema of the legs rapidly disappeared and the patient began to appear better However within a week she had a rigor with pyrexia rising to [illegible] From this time onwards rigors and sweats were frequent with a fluctuating temperature which rose to 102 in the afternoons At this time it was observed that her finger nails showed curving in both directions and were assuming the parrot-beak appearance A blood count showed a leucocytosis of 12 000 with 70 per cent polymorphs and a blood culture showed a growth of the *Streptococcus viridans*

For the remaining eight weeks of her life she gradually deteriorated There was little change in her physical signs Her fingers gradually became more clubbed She became pale but never assumed the café au lait tinge that is described as typical of infective endocarditis Conjunctival emboli appeared about seven weeks before her death Infarction of the spleen with severe pain in the left side occurred on two occasions, and her spleen then became palpable A few red corpuscles were found from time to time in her urine Pyrexia persisted until her death Towards the end a cerebral embolus led to the development of a right hemiplegia with aphasia She died the day after this accident

Post-mortem—Only a limited autopsy was permitted On opening the thorax both pleural cavities were found to contain free fluid A little clear fluid was present in the pericardium The heart was greatly enlarged especially the left ventricle The ascending part of the aorta was dilated and the aorta gradually tapered to just beyond the origin of the left subclavian artery where there was a marked constriction (Fig 2) The ductus arteriosus was clearly visible a fraction of an inch proximal to the constriction of the aorta The vessels of the arch of the aorta were considerably larger than normal as were the innominate the left carotid and the left subclavian On laying open the aorta at the site of constriction it was found to be completely occluded Round about the site the walls were completely smooth and there was no evidence of any infective process in this region Patches of atheroma were present in the [illegible] There was a bicuspid aortic valve one cusp being [illegible] larger than the other (Fig 3) The larger cusp had a [illegible] nected to its free border at [illegible] fibrous tissue that passed to the wall of the [illegible] represented the site of attachment of the [illegible] cusp The margins of the cusps were greatly [illegible] On the right cusp there was a [illegible] vegetation and recent [illegible] The vegetations [illegible] down the wall of the left ventricle [illegible] Arising from the root of the aorta [illegible] the right [illegible] the size of a pea The cavity of the left ventricle was larger than normal and the walls were [illegible]

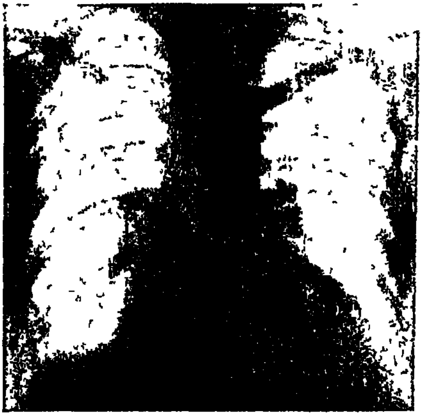

FIG 1—Radiogram showing hypertrophy of the heart with enlarged left ventricle but little sign of an aortic knuckle Notching of the ribs is visible on both sides

The septum was greatly hypertrophied and projected into the cavity of the right ventricle Just distal to the constriction there arose three aberrant arteries The internal mammary arteries were of the calibre of a pencil.

This case presents several points of interest The association of infective endocarditis with coarctation is not infrequent, and in the 200 cases collected by Abbott, death from bacterial endocarditis occurred in 14 In these 14 cases mycotic changes were present near the site of coarctation in 13 and in the ascending aorta in 1 A further case has been reported by Poynton and Sheldon,[14] and in this there was ulceration of the intima distal to the constriction of the aorta

The abnormality most frequently associated with coarctation is a bicuspid aortic valve, and this was present in the case now reported In its clinical aspects this case was for many years considered to be one of rheumatic heart disease with aortic incompetence as the main lesion Concentration on this aortic lesion had led to neglect of the other striking signs that she presented Thus the diminished femoral pulsation, the symptoms of intermittent claudication, the difference in temperature between the upper and the lower extremities had all been overlooked

Noteworthy too is the presence of an enlarged thyroid gland, probably the result of an increased blood-supply due to the rôle of the thyroid arteries in assisting a collateral circulation Lorriga [15] was the first to note symptoms of hyperthyroidism with coarctation, and later Blackford [8] made a similar observation. Ulrich [11] reported two cases of coarctation in which there was an increased basal metabolic rate, one of which was twice operated on on account of her hyperthyroidism He suggested that ligation of the inferior thyroid artery might be sufficient to relieve the symptoms of hyperthyroidism in these cases

If the condition is borne in mind its recognition should be fairly simple, for it gives rise to a well-defined clinical picture Hypertension and cerebral accidents in the young, unexplained aortic incompetence, aberrant systolic murmurs and thrills, the general symptomatology outlined in the above case should all lead to a further review of the situation in the light of a possible coarctation. The finding of enlarged arteries in the scapular region or in the upper part of the body; delay in, reduction of, or absence of the femoral pulse; and a systolic blood pressure in the arms exceeding that in the legs should all be sufficient to clinch a diagnosis of coarctation

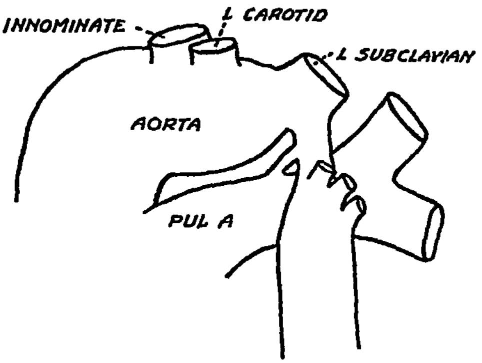

FIG 2.—Diagram showing the constriction of the aorta

These cases are compatible with a long life, the oldest in the literature surviving to the age of 92 Survival to the age of 50 and over is not uncommon. The patients are apt to die at any time, however, either from infective endocarditis, abnormal tissues being especially vulnerable to streptococcal onslaught or from cardiac overstrain and rupture of the aort

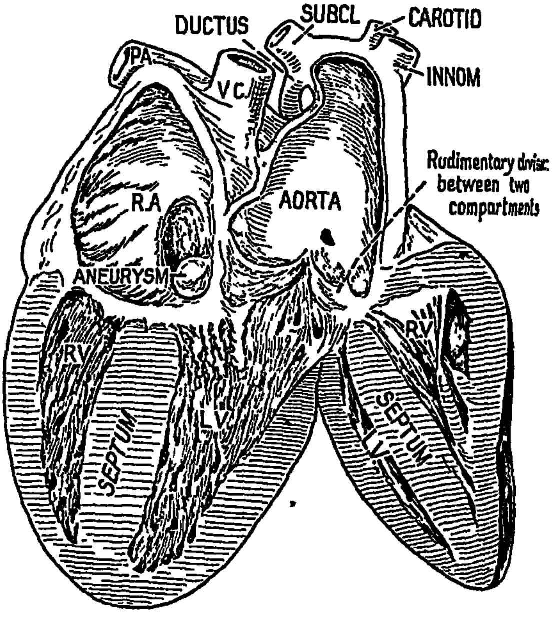

FIG 3.—The heart opened

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Hove Hospital—On Oct 6th, with full mason rites, Major R Lawrence Thornton, provincial gra master of Sussex, laid the *foundation-stone* of th extension of this institution. The hospital is a of the Brighton, Hove and Preston Dispensary wh was founded in 1809, and which was the parent the Royal Sussex County Hospital established in 18 It was in 1859 that the Hove branch was formed 12 beds for a population of about 25,000, and it wa not until 1888 that the present hospital was opened Sackville-road Extensions have been made from tim to time to meet the demands upon the hospital with it present population of some 60,000. In the summer of la year the governors decided to go forward with a s to increase the number of beds from 24 to 46, enlarge th out-patients' department, provide a ward for patie able to pay moderate fees; and a children's ward Wi these additions it will be possible to provide massa and therapeutic departments, and a new X ray depar ment, and, possibly, better quarters for the medical nursing and domestic staff. The enlargement of th hospital entails a cost of about £25,000, and the archit is Mr. J G. Oatley

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF NEUROLOGY

AT a meeting of this section held on Oct 18th the chair was taken by Dr S A KINNIER WILSON, the president, who opened a discussion on

Unsettled Questions of Neurosyphilis

He recalled an experience, 30 years ago when he had looked down a microscope in Paris and seen the newly discovered organism of syphilis The advance made since had been but small owing to lack of knowledge about that organism Most workers had now accepted, in part at least the views put forward about the organism by Mr J E R McDonagh 20 years ago It seemed to be pleomorphic, but we did not know how it divided or whether it was cultivable or not Lymph glands in an early stage of the disease were virulent although no spirochætes were found in them The question of the existence of an intracellular or very small spore like form had never been settled, though it would explain many problems A spirochæte was larger than a spermatozoon, and inheritance must therefore be in a fluid form—which was not truly congenital disease An actively motile spirochæte in an ovum must destroy it Dr Kinnier Wilson had known one of binovular twins be syphilitic and die while the other was healthy The mother had had five healthy pregnancies before and 11 after and admitted intercourse with a syphilitic man on one occasion before the birth of the twins Her blood had never at any time shown a positive Wassermann reaction Sometimes a whole family became syphilised, sometimes only one infant out of many, there seemed to be no rule He did not know whether early treatment was making any difference in congenital syphilis Some of the clinical rarities of syphilis had never been explained—for example, acute ascending meningomyelitis, and the rebelliousness to treatment of syphilitic amyotrophy and parkinsonism He had never seen syphilitic amyotrophy in a child, though it might well be expected Central scotoma did not occur in syphilitic optic atrophy Why did syphilis at times produce a systemic lesion and at others a scattered one? It was often very difficult to understand the relation of symptoms to lesions notably in general paralysis of the insane If megalomania was a release phenomenon, why did it not occur in all forms of cortical disease allowing release? Insight varied strangely, Guy de Maupassant had been able to use his own experiences as a paralytic, and had described the phenomenon of autoscopy, while a well known pathologist who had often described the condition in scientific papers had entirely failed to realise it when he became a victim Mortality tables of tabes and general paralysis showed that the mortality of the latter had been halved in the last 22 years while there had actually been an increase in deaths from tabes. These figures must have some meaning

Mr J E R McDONAGH said that the knowledge we thought we had acquired must be revised The spore was the actual cause of infection the spirochæte being the adult male phase Treatment and [illegible] were non specific and treatment merely corrected abnormal chemical states This conception explained the long incubation period conceptional and congenital syphilis and the inadequacy of cure Nobody had syphilis a second time The spore lay quiescent until resistance was lowered It was the body, not the organism that varied Injudicious treatment had the action of an invader Syphilis was particularly liable to precipitate arterio sclerotic manifestations and to put on the clock of age changes Infinitely more was to be gained by treating the patient than the infection Syphilis behaved just like any other invader, there was nothing in syphilis qua syphilis

TREATMENT

Dr BUCKLEY SHARP said that the problem of treatment was how to penetrate the blood brain barrier Resource had to be made to chemotherapy, aided by immunity and ability to respond to chemicals injected Treatment was usually started as soon as diagnosis was made, and cure often resulted—even to the extent of second infection Neurosyphilis more usually followed inadequate initial treatment The arsenic compounds in general use did not pass the blood brain barrier, but tryparsamide did, and had a special affinity for the cells of the central nervous system For this reason it sometimes caused amblyopia but this complication appeared early if at all Recovery from general paralysis had followed tryparsamide The drug had little if any effect on the somatic manifestations and so should be combined with bismuth, which only appeared in minute quantities in the cerebro spinal fluid In some preparations the bismuth ion was negatively charged and theoretically of greater penetrating power than the positively charged ion of the salicylate Penetration was promoted by inflammation, air injections had been used to this end Horse serum injections, or hypotonic solutions, might be tried Malarial treatment should be followed up by chemicals Other forms of pyrexia gave results inferior to those of malaria Natural malaria did not seem to protect Europeans from neurosyphilis The most perplexing and disheartening problem was offered by tabes No medical treatment could be relied upon to put an end to root pains or crises Optic atrophy seemed to go on to blindness whatever was done

CONGENITAL SYPHILIS AND MENTAL DISORDER

Dr DAVID NABARRO spoke of congenital [illegible] syphilis to which he said, white children were [illegible] times as susceptible as black He reported on 428 cases at Great Ormond street Half [illegible] and 10 6 per cent of older children had [illegible] cerebro spinal fluids Deducting treated cases the latter figure rose to 30 per cent The [illegible] system was therefore frequently [illegible] and inadequate early treatment might [illegible] recurrence The cerebro spinal [illegible] practically always became [illegible] and thorough treatment [illegible] cephalus was not uncommon [illegible] pupils might be the only [illegible] was often found General [illegible] to diagnose in early [illegible] very rare, and defective [illegible] sign In third generation [illegible] was often the most [illegible] showed nerve involve[illegible] spinal fluid could [illegible] treatment in a very [illegible] the damage had [illegible] nervous system [illegible] syphilis in infants, and latent neurosyphilis in older children

Dr W **Nicol** related experience of malarial therapy at a mental hospital If, he said, a patient had not recovered nine months after treatment he was most unlikely ever to improve A small proportion had shown marked improvement; in a larger proportion the progressive course had been arrested The therapy indisputably prolonged life, and allowed many to return to their occupations outside The dreadful semi-existence so commonly seen in earlier days never ended the life of those treated with malaria The character of the psychosis was often altered in those not relieved Some of the relieved had been at skilled and useful work for eight years, but often showed traces of dysarthria, and the Argyll-Robertson pupil remained Some had relapsed after three or four years Time alone would tell the ultimate fate of the successfully treated

Dr K **Paddle** said that the relation of syphilis to mental deficiency was unsettled Not all defectives with congenital syphilis had abnormal fluids, and it was difficult to say whether those with normal fluids would have been defective in the absence of syphilis A neuropathic taint in the family was often found in addition In the absence of inherent neuronic weakness congenital syphilis was only in rare cases responsible for mental deficiency. Blood and cerebro-spinal fluid might become negative without any treatment

Dr L C **Cook** described congenital syphilis in a group of mental defectives. The only common points in their syndromes, he said, were the deficiency, the neurosyphilis, and the absence of classical signs of general paralysis Four cases had improved and become useful hospital workers; four others were deteriorating The prognostic significance that should be attached to pathological findings in the fluid was doubtful. Four cases were undoubtedly congenital syphilitics but had no signs of neurosyphilis except mental defect There was one case of nævoid amentia and one of cretinism The symptoms of these patients depended largely on the presence or absence of diplegia There seemed to be no clear-cut mental syndrome

DISCUSSION

Mr R **Lindsay Rea** said that he had never seen a central scotoma in any syphilitic case Nor had he ever known macular degeneration due to syphilis. Gonorrhœal iritis occurred only in patients with dental sepsis Many of these conditions were due not to one specific organism but to a conjunction of several factors There must, however, be no doubt or hesitation about antisyphilitic treatment In over 400 cases of interstitial keratitis treated he had never had a case of deafness Treatment should not be abandoned for at least two years

Mr **Sidney Scott** said that syphilis of the vestibular or cochlear nerves was extremely difficult to diagnose There were very few pathological otologists, because the subject needed great time and trouble Tests must be precise, and examine the whole range of tones He appealed for more otological material from autopsies

Dr **Hugh Garland** said he had seen some 27 cases within the last few months which he had called neurosyphilis on symptomatic grounds, but five males and most of the females gave no history of syphilis, and had normal fluids and bloods They were improving under antisyphilitic treatment Some cases, however, developed neurological signs despite thorough treatment

Dr **Fergus Ferguson** asked if malarial treatment were justifiable in young patients, and whether a positive blood Wassermann could be taken as diagnostic between neurasthenia and general paralysis

Dr **Leonard Findlay** thought that the admission that syphilis was of bacterial origin dismissed it from the hereditary field He had seen no disadvantage in treating the child with malaria, in fact, he had seen one cure and one arrest, in children with short histories He had seen no benefit from other forms of treatment

Mr **Leslie Paton** only knew of one reported case of central scotoma in syphilis, and that was doubtful. The explanation might be that the invasion of the optic nerve was sometimes parenchymatous and sometimes interstitial, the latter being high up in chiasma or tract The artery entered the nerve half an inch behind the eye only, and so there was no invasion from the central retinal vessels He had definitely seen a case of reinfection

SECTION OF OBSTETRICS AND GYNÆCOLOGY

At a meeting of this section on Oct 19th, with Mr **Eardley Holland**, the president, in the chair, Dr C R. **Croft** read a short paper on

Contraction Ring: Treatment by Amyl Nitrite

He said that the first serious paper on the subject was written by T C Smith in 1882, in which hour glass contraction was described in 30 women (33 labours), excluding all doubtful cases, such as those of rigid os In that series 8 mothers and 25 children were lost, the craniotomy record being 10 cases Clifford White, in 1913, distinguished contraction ring from ordinary obstructed labour and described expectant measures for contracted ring as useless W Gilliatt had reported 14 cases with 12 surviving mothers, in his fourteenth case he had applied amyl nitrite Dr Croft's case was as follows —

A woman in her eleventh pregnancy, at the eighth month, had terribly severe labour pains The membranes ruptured at 2 P M, when she had great pain followed by considerable hæmorrhage The vagina and lower uterine segment were found to be distended with blood clot The uterine wall was contracted to form a rigid canal and this canal was of a uniform diameter of 2 in The ring was compressing the fœtus Amyl nitrite [illegible] was used, and at the end of a minute, traction on the trunk brought on delivery, and this process was completed in three minutes The hæmorrhage was only slight In another case a magical effect was caused by only [illegible] of the drug

The action of nitrites was first observed by Guthrie in 1859, when they were reported to cause, in the human subject, acceleration of pulse, throbbing of the carotids, and flushing of the face A Gamgee later showed that their use reduced arterial tension Nitrites restored the diastole in smooth muscle, and their effect was always stimulating, never depressant They therefore appeared to be of marked value in restoring the diastole in cases of spasm One of the striking features in the use of amyl nitrite for contraction ring was the absence of post-partum hæmorrhage

Mr W **Gilliatt** supported Dr Croft and suggested that amyl nitrite might also be used in cases of tonically contracted uterus He had recently described 14 cases of contraction ring, of which one was delivered after two failures with forceps strong contraction of the ring could be felt Three minims of amyl nitrite was broken under the Clover's mask, and with the next pain delivery proved to be simple and easy, and with little obvious contraction In one case amyl nitrite had no effect, nor did gr 1/1000 adrenaline and a lower segment Cæsarean section was done. The ring was very marked and unusually wide, the uterus being divided almost into a figure of 8 The patient made an excellent recovery after 48 hours bronchitis He was convinced that the use of amyl nitrite meant delivery without undue danger to the mother

Dr **Chassar Moir** described the case of a woman who had been in labour two days no success attended attempts at forceps delivery, though the head was drawn down to the vulva The uterine contraction was felt round the neck of the fœtus Amyl nitrite was given until the patient showed marked flushing, then anæsthesia was deepened and delivery was easy

Mr **James Wyatt** related two cases in which amyl nitrite was successful after other measures had been tried In each, the drug capsule was broken under the Clover's inhaler

Prof **J Preston Maxwell** read a paper profusely illustrated by slides, on

Osteomalacia and Fœtal Rickets

He said that the term osteomalacia to denote a disease should be discontinued, it was no more than a symptom of what was more correctly termed "adult rickets" A typical case of the condition was the following —

A woman came to hospital in great pain, unable to walk, and the picture of abject misery There were deformities of spine and chest There was also osteoporosis and practical obliteration of the vagina After two months of treatment she went out free from pain able to walk, and feeling happy She had been treated with ultraviolet light, massage and good food, and was encouraged to take as much exercise as she could

In all these cases the blood calcium of both mother and child was low, as also was the phosphorus The children of these mothers were often found to be the subjects of fœtal rickets In some cases the disease affected mainly the pelvis, in others the chest, in others the spine From the fifth year onwards rickets bore an increasingly close resemblance to osteomalacia Many of the children with rickets had also marked tetany, and a number of them had osteoporosis sometimes without definite evidence of fœtal rickets In some cases giving the mother vitamin D seemed to have cured the rickets but left the osteoporosis. In many cases of fœtal rickets the fontanelles were very widely open and the chest was more square than usual By giving calcium phosphorus ergosterol, and cod-liver oil much improvement could be achieved The food value should be at least 2500 calories proteins 90 g, fat 75 g, calcium 0 6 g phosphorus 1 2 g Analyses of the dietaries of these patients showed a serious shortage of these elements There was no reason he concluded why, with proper treatment and diet all forms of rickets should not be wiped out Prof Maxwell acknowledged his indebtedness for the assistance rendered him in the research by his colleagues at Peiping Union Medical College

Prof **H M Turnbull** said that he had examined the bones from two of the fœtuses In the first fœtus the cartilaginous epiphyses showed absence of provisional calcification and other changes characteristic of rickets, but there was no excess of uncalcified bone, that is, of osteoid tissue The absence of excessive osteoid tissue was attributed to osteoblastic inactivity, such as would be expected from the gross multiple food deficiency of the Chinese mothers All bone when first formed is osteoid but normally it becomes rapidly calcified so that only narrow seams of osteoid tissue are found If bone formation is very slight or has ceased, little or no osteoid tissue is formed, and consequently there can then be no excess of osteoid tissue when calcification is in abeyance In the second fœtus the complete picture of rickets was found an excess of osteoid tissue being present in addition to the epiphyseal abnormalities Presumably the general food deficiency of the mother had not been so great He had not yet seen a suitably prepared section of bone from one of Prof Maxwell's adult cases The skeletons undoubtedly showed great osteoporosis such as one would expect from diets deficient in much more than vitamin D As in the hunger osteomalacia of the war one would expect osteoblastic activity to be so poor that histological evidence of arrest of calcification in the form of excessive osteoid tissue might well be absent, epiphyseal abnormalities due to arrested calcification would be absent at ages when growth in length of the bones had ceased Prof Turnbull considered that there might be two diseases found at all periods of life in which there was the same histological evidence of arrest of calcification one in which there was a deficiency of vitamin D alone, and another in which there was also a deficiency of calcium Cases of juvenile rickets complicated by tetany and most cases of adult osteomalacia might belong to the latter

Dr **Donald Hunter** congratulated Prof Maxwell on having perfected the technique for calcium balance estimations under the adverse conditions which must have existed when he began his work in China In England to day one found two groups of individuals suffering from osteomalacia One of these occurred as a result of the industrial depression in the north, he had described its typical features two years ago

One such woman aged 33 was born in Darlington Durham and had always lived there In 1922 immediately following her fourth pregnancy she began to have pains in the left hip and back By 1928 the total height had diminished by two inches the limbs were bowed, the bones tender and she was unable to walk unaided The pelvic measurements were interspinous, 25 4 cm intercristal 28 cm external conjugate, 16 5 cm transverse diameter at outlet 2 5 cm The serum calcium was 9 6 mg per 100 c cm and the plasma phosphorus 1 5 mg per 100 c cm The calcium output was estimated in the urine and fæces for three 3-day periods the patient being kept on a weighed diet of known low calcium content The calcium output in urine and fæces was slightly less than in the control Radiograms of the bones showed definite diminution in density with multiple spontaneous fractures The calvaria showed innumerable pale rounded mottled shadows many of them more than 1 cm in diameter There was a greatly deformed triradiate pelvis with fracture of the superior ramus of the os pubis on each side A piece of bone removed from the inner aspect of the [illegible] showed the abnormally deep osteoid seams of osteomalacia associated with great osteoporosis She was given a diet of high calcium content together with large doses of calcium lactate and tablets containing vitamin D Within three months the pain disappeared from the bones and she began to walk Within six months she was able to get about the house to climb the stairs and to do her usual household duties Radiograms of the bones showed union of many of the fractures and [illegible] healing of the defects in the calvaria

The other cause of osteomalacia was idiopathic steatorrhœa (cœliac disease) [illegible] with the disease presented the following features fatty stools, dilatation of the colon, tetany, osteomalacia, anæmia, skin lesions, and infantilism This clinical picture was probably dependent upon a disturbance of gastro-intestinal function resulting in deficient production, absorption, or utilisation of one or more essential factors In 15 cases recently investigated steatorrhœa and disturbances of calcium metabolism were alone common to the whole group Changes in the skeleton were found in all cases investigated Radiograms showed osteoporosis and often florid rickets In three cases histological examination of portions of bone showed osteomalacia and osteoporosis It would therefore appear that osteomalacia may occur not only in persons deprived of calcium salts and vitamin D, but also in others born with a defective mechanism for absorption or utilisation of these substances

Miss HONOR FELL, D Sc, said that her interest in this subject was on the histological side She asked whether the characteristics of the osteoid tissue in cases of fœtal rickets were identical with those of normal osteoid tissue One of her colleagues at the Strangeways laboratory had been cultivating osteogenic tissue in a D-deficiency medium, and had found that the osteoid produced under those circumstances was very different from that produced when the tissue was cultivated in a normal medium

Mr VIVIAN GREEN-ARMYTAGE remarked on the difficulty of conducting such research work in the tropics owing to religious and racial prejudices, and said that the whole world was indebted for the results achieved There were many clinical types of the disease The general idea among practitioners was that osteomalacia was mostly a bony lesion He used to teach that there were several clinical types—gastro-intestinal, anæmic, and rheumatic In the presence of oral sepsis there might be a blend of all three Much depended on whether the condition of the mother was acute at the time of pregnancy The chronic osteomalacic never seemed to have a rickety fœtus but rather one with wasting and hæmorrhages The tendency to exhibit the hæmorrhagic diathesis was an interesting feature of these babies Cæsarean section on such women revealed an omentum so shrivelled up as scarcely to be found He had always regarded "funnel pelvis" as the result of dietetic error He asked whether Prof Maxwell had met with many osteomalacics, either acute or chronic, who had developed eclampsia He could not himself remember such an association It was curious that in this disease, in which there was calcium and phosphorus deficiency, one did not find eclampsia

Dr LUCY WILLS said that in a series of cases tetany was the exception In 30 cases, with two exceptions, the osteomalacia was associated with low calcium and phosphorus

Dr G. W THEOBALD said he had noticed, in the tables of cases shown by Prof Maxwell, a great variety in the amounts of blood calcium present in the different patients, the quantity varying between 3 per cent and 8 per cent Also the blood calcium of the fœtus was higher than that of the mother. He would like to know whether Prof Maxwell had attempted any estimation of the diffusible calcium, as opposed to the other calcium Calcium subserved many functions in the body, and much depended on the form in which it was present. There was a good deal of difference between the person who had regularly taken a gram of calcium and one who had not taken it and then was dosed with it, as in the latter case the mechanism for getting rid of it was probably lacking

Prof MAXWELL, in his reply, said he had not taken up the question of calcium-deficiency rickets and phosphorus-deficiency rickets In China the bulk of the cases were of the first variety It was not realised how much osteomalacia was present in countries where it was not supposed to exist He was sure congenital defects led to osteomalacia. He was not able to answer Dr Fell's question as to the osteoid tissue, but invited her to examine his specimens He agreed there was a true phosphorus form of rickets which did not exhibit the tetany factor In answer to Mr Green-Armytage, he thought much remained yet to be done in the classification of osteomalacias He was gradually gathering evidence as to avitaminosis in these cases He had never seen in the same patient both osteomalacia and eclampsia The question as to why the calcium content of the fœtus was so much higher than in the mother opened up a wide subject.

MEDICAL SOCIETY OF LONDON

AT a meeting of this society held on Oct 22nd, Dr A HOPE GOSSE in the chair, the subject of discussion was

The Anæmias and their Treatment

The debate was opened by Dr LESLIE WITTS, whose paper appears on p 919

Dr F J POYNTON described the puzzling case of a girl of 12 who developed pernicious anæmia nine months after recovery from a secondary anæmia. She would not at first take liver, and after a time began, without the aid of drugs, to take a turn for the better She was then persuaded to take liver, and remained well for many years, eventually dying of tuberculosis.

Mr V. ZACHARY COPE described the case of a man, aged 21, who had empyæma which had been mistaken for thoracic tumour until it pointed, when the pus was let out The patient still had profound anæmia, his red cells being down to a million, but it was not the pernicious form Many remedies, including blood transfusion, were tried without benefit, then it was decided to give liver, and the first dose started a rapid recovery

Mr EARDLEY HOLLAND said that, if it was looked for, the so-called simple anæmia of pregnancy was found to be a very common condition, though pernicious anæmia was but very rarely associated with pregnancy He thought there was good reason for making a distinct category of the nutritional anæmia of pregnancy He had had, at the London Hospital, a remarkable case of this disorder. a woman, whose husband had been long out of work, had 12 children, and she had to work hard and keep the whole family on 30 shillings a week She came to the hospital seven months' pregnant, and had simple anæmia, the hæmoglobin being 25 per cent. Rest in bed and good food soon put her right. A fallacy common in the profession as well as among nurses was the idea that meat was not good for pregnant women, he thought that abstention from meat during the stress of childbearing might contribute largely to this form of anæmia The obstetrician had to be on the look-out also for anæmia in association with albuminuric pregnancy, these cases responded well to large doses of iron There was also an anæmia associated with the climacteric, occurring in women who had irregular menstruation profuse in quantity Recognition that such cases needed only treatment with iron would save many hysterectomies or artificial menopauses

Dr F Parkes Weber asked how common real aplastic anæmia was He had seen one case of acute aplastic anæmia, which did not present an opportunity for transfusion, and in due course the patient died because he ceased to form red blood-cells He considered that such cases were excessively rare and that many cases called aplastic anæmia were either myelosis or lymphadenosis

Dr G W Goodhart said he would have liked to hear Mr Eardley Holland's views on the anæmias of small infants He had been struck by the work of Dr Helen Mackay, and was horrified to see advice issued by the Ministry of Health, following that work, to the effect that small anæmic infants should be given doses of iron with their food Surely it was more biological to give iron to the mother and let her supply the infant with what it required He would like to know whether anæmia really was as common in those infants as Dr Mackay's work suggested At present there seemed to be a general tendency to treat with transfusion women who had anæmia following abortion, his suggestion was that transfusion was often done when it was unnecessary, and that all such cases usually required was iron With regard to the cases of severe anæmia which made a rapid recovery to complete health such as one referred to by Dr Poynton, no adequate explanation had been offered for this dramatic recovery

Mr V B Green Armytage differed from the opinion that the megalocytic type of anæmia was rare in this country Numbers of young married women were arriving in this country from the tropics, Brazil, and South Africa, to be treated for anæmia during their pregnancy, for these he had found Marmite successful where liver and iron had failed If more than 100 to 200 c cm of blood was transfused, these women were very liable to abort or miscarry, or have a premature labour

Dr P H Manson-Bahr remarked that those who practised tropical medicine might be said to wallow in anæmia There were met with in the tropics anæmias accompanied by leukæmia Both sprue and kala azar were associated with stomatitis and especially the latter in which the terminal symptom was cancrum oris, like that seen in agranulocytosis Could it be the fact that a secondary leucopenia was brought about by the action of the parasite and that the leucopenia rather than the disease caused the stomatitis? The aphthous stomatitis of sprue was almost always associated with moderate leucopenia—i e, 4000 or 5000 whites There was one particular infection in the tropics which produced an amazing anæmia—viz oroya fever—due to an intracapsular parasite, the Bartonella A puzzling anæmia was that associated with ankylostomiasis, for though this form of anæmia was very well known in the tropics, in the Pacific Islands natives might be heavily infected with ankylostomes without suffering from anæmia which occurred only in those who were grossly ill nourished overworked, and harassed An anæmia about which we were still ignorant was that rarely associated with the broad tapeworm He asked if Dr Watts could say what was the function of the spleen in some of these anæmias which were associated with splenomegaly; recovered cases of this kind had been reported in pre liver days Stephen Mackenzie watched a case for 30 years, that of a printer As early as 1880 Sir Patrick Manson had treated his cases of sprue with liver having got the idea from the Chinese.

Dr W Burton Wood asked Dr Watts to elaborate his remarks on the treatment of agranulocytic anæmia

REPLY

Dr Watts, in reply said that the remissions in pernicious anæmia were still a mystery similar strange remissions were seen in rickets and scurvy As Prof E Mellanby had said in his recent book, though the history of remittence had often led to the conclusion that a bacterial or a spirochætal infection was being dealt with a remitting disorder might be of purely nutritional origin When better methods of testing digestive power had been evolved it was likely that variations in the patients' secretions and in their power of absorption would be found Any gross disease in the small intestine might easily lead to severe anæmia In difficult cases he advocated the use of both iron and liver, as a double deficiency was always possible Nucleotide seemed to be most valuable in classical cases of achromocytic anæmia which former generations called "putrid sore throat"

The suggestion that meat was poison to pregnant women was a mischievous one which should be strongly combated, the pregnant woman should have an adequate supply of red meat, green vegetables, and fruit Anæmia at the menopause was a complicated question, he was sure that many women bled because they were anæmic In many of these women there seemed to be a predisposition to anæmia, which was not due to their menorrhagia Anæmia associated with the menopause might be very difficult to control and an artificial menopause might be essential, though not for those who had only bled moderately This procedure, which practitioners were loath to adopt, has cut short years of ill health He saw a surprising number of atypical cases of leukæmia in patients who came with apparently profound anæmia A number of cases masqueraded as aplastic anæmia which post mortem were found to have a red bone marrow There was probably some key, if it could have been found, which might have unlocked that marrow, iron would not do it He did not know why Dr Goodhart should be horrified by the giving of iron to children he was not sure that attention to the mothers would preserve the children from anæmia Many children of good families looked as if they would benefit from a liberal supply of iron Most children took it well Certainly such conditions as otitis media were twice as common in untreated children as in those who were given iron But he agreed that too ready a resort to transfusion was to be deprecated

The relationship of the spleen to anæmia was a difficult question There was some sympathy between the spleen and the bone marrow which many had tried to explore Before the advent of the liver treatment, splenectomy was practised for pernicious anæmia and often marked temporary remission was produced To patients with chronic leucopenia he gave plenty of vitamins and nuclein-containing food, such as sweetbread liver and kidneys, and ascertained whether the possibility of the patient had taken toxic drugs A well known surgeon with chronic leucopenia had been taking [illegible] for some years for colitis and had greatly improved after giving up this drug and taking a generous diet Ultra violet therapy also seemed to help in such cases Nucleotide was not well tolerated by most patients, and was the kind of thing to be kept in hand against the time when something had happened

MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY

AT an extraordinary general meeting of this society held in London on Oct 11th, with Dr J C. YOUNG in the chair, the following resolution was passed "The objects of the society shall be (1) to advocate and extend the general psychological approach to medicine, and (2) to promote the study and discussion of individual psychology; membership shall neither require nor imply formal adherence to any particular school of psychology"

The CHAIRMAN gave an address entitled

Awareness in Psychological Medicine

The consciousness of the higher animals, he said, differs from the consciousness of the human animal in that the latter, in addition to the vital or organic memory common to both, disposes of a *voluntary* capacity for recollection not found in the other animals (The elephant's long memory for kindnesses and injuries, for example, is a function of vital memory rather than voluntary recollection) Nevertheless, in so far as human voluntary recollection consists in the last resort in the capacity to delay and to coördinate reflexes, depending somatically on a highly differentiated nervous organisation of highly differentiated parts, the difference between human and animal consciousness may be said to be only one of degree There is no essential difference in kind. Similarly there are differences, as between man and man, in degree of human consciousness, almost amounting to a difference in kind The higher degrees of consciousness imply higher degrees of integration with less liability to the disintegration or disassociation which is the essential feature in neurosis and psychosis Dr Young thought it useful to designate these higher degrees as awareness No sharp dividing line could be drawn between awareness and consciousness, but awareness connoted a degree of self-awareness of motive and life goal which was deficient in the neurotic and practically extinguished in the psychotic Awareness did not happen mechanically, nor could it be achieved by mechanical reading of text-books It required work on oneself and a certain disciplinary sincerity Only in virtue of awareness born of experience recognised in *himself* of the psychological realities and mechanisms which have overwhelmed his patients can the physician in psychological medicine hope to cure or alleviate their sufferings of *unawareness* of disassociation and disintegration Dr Young gave examples of his recognition in himself of neurotic and psychotic mechanisms Awareness, or imaginative understanding, begets awareness In individual psychology this desideratum in the physician takes precedence over every kind of technological expertise both in general medicine and surgery, and more especially in psychological medicine

PATHOLOGICAL SOCIETY OF MANCHESTER

AT a meeting of this society on Oct 10th, Prof. S. L BAKER delivered a presidential address on

Cholesterol and Disease

Cholesterol deposits, he said, might be either generalised, when they were of metabolic origin, or local following local destruction of tissue Arterial disease was the most important condition in which cholesterol deposits were found, and had been much studied experimentally Several distinct processes were concerned in the production of the common forms of arterial hardening comprised by the term arterio-sclerosis Of these processes the most important was athero-sclerosis, characterised by the development of fatty (lipoid) streaks and patches and atheromatous deposits, particularly in the aorta and its main branches Rabbits whose diet contained powdered cholesterol showed such lesions Their development was due to the greatly raised blood cholesterol The lesions were closely similar, both topographically and histologically, to those seen in human athero-sclerosis The type of lesion depended on the time the rabbits were allowed to survive. Fatty streaks and patches were early lesions, while raised patches with intimal fibrosis occurred later Spontaneous athero-sclerosis was very rare in the rabbit, but in man it was present in some degree in almost all subjects The fatty (lipoid) streaks seen in children had been regarded as toxic effects, but it had been found that their incidence was correlated with age and not with toxic conditions It was probable that the slighter lipoid deposits might disappear, but deposits tended to increase with age. In diabetes and the nephrotic type of renal disease, conditions in which hypercholesterolæmia was present there was an increased tendency to athero sclerosis There was no evidence that hypercholesterolæmia led to hyperpiesia, but increased strain on the arterial wall predisposed to lipoid deposits Extensive athero sclerosis might be found in subjects not showing hypercholesterolæmia, but work on rabbits had shown that atheromatous deposits following a temporary rise in blood cholesterol remained in the arterial wall for long periods The experimental evidence incriminating cholesterol in the production of athero sclerosis was abundant, but much further systematic work on the fluctuations of blood cholesterol in the human subject was needed to throw further light on th problem

ROYAL ACADEMY OF MEDICINE IN IRELAND

AT a meeting of the section of medicine on Oct 5th with Dr V M SYNGE, the president, in the chair Dr GUSTAV MAURER, medical superintendent of the Sanatorium Guardaval, Davos, read a paper on a modification of the

Jacobæus Operation for Pleural Adhesions

in cases of artificial pneumothorax, describing his technique for the examination and delimitation of adhesions with a thoracoscope, their trans-illumination with an instrument of his own design, and the enucleation from the chest wall The advantages of this method were absence of shock and a great reduction in the incidence of post-operative complications, such as empyema, hæmorrhage, and pleural effusion More than 800 cases had been operated upon with a mortality of less than ½ per cent The paper was illustrated with lantern slides and X ray plates

The PRESIDENT of the ACADEMY (Mr R A Stoney) said that in Ireland the surgical treatment of tuberculosis was still in an adolescent stage In the surgical treatment of tuberculosis the close cooperation of physician, surgeon, and radiologist was most important The work was extremely technical, and the results obtained by Dr Maurer seemed to him almost miraculous —Dr HAROLD QUINLAN said he was attached to the out-patient department of a hospital in which he saw from 120 to 150 cases of tuberculosis a year Of these about 66 per cent were unilateral many of them on that account being suitable for pneumothorax He had seen some cases in which adhesions had been cut, but he thought it was difficult to find cases suitable for this procedure He did not like interfering with adhesions unless they were very thin and fibrous in character—Dr W R F COLLIS thought the cases of bilateral pneumothorax were particularly interesting It was a line of treatment not definitely in the province of either surgeon or physician, which might be more widely adopted than was the case at present —Dr J B MAGENNIS was amazed at the successful results obtained by Dr Maurer in cases which would have been looked upon as hopeless Until one had interfered with an adhesion without knowing, it was impossible to realise the importance of trans-illumination It was remarkable how little reaction there was on the part of the pleura in Dr Maurer's cases —Dr SINGER remarked on the very small number of cases in which an exudate had occurred

REVIEWS AND NOTICES OF BOOKS

Nutrition and Disease

The Interaction of Clinical and Experimental Work By EDWARD MELLANBY, M D, F R C P F R S, late *Professor of Pharmacology*, University of Sheffield, Consulting Physician, Royal Infirmary, Sheffield, Secretary, Medical Research Council London Oliver and Boyd 1934 Pp 171 8s 6d

THE extent to which progress in medical art and science depends on coöperation and mutual understanding between research workers and clinicians is clearly demonstrated by Prof Mellanby in this book, which is *based on the Croonian lectures* delivered to the Royal College of Physicians in 1933 He points out that the interaction between the laboratory and the ward not only prevents unjustifiable claims being advanced for some new product or therapeutic agent but stimulates research by revealing problems for the solution of which the clinician must turn to the laboratory The old adage on ' the proof of the pudding " has particular significance in relation to the clinical value of the results of laboratory researches on nutrition It is apparent throughout that Prof Mellanby thinks in terms of the patient his outlook being balanced by his unrivalled dual experience as clinician and research worker

In this work he covers a vast field and critically examines the present position of the study of nutrition and its relation to disease in general and certain diseases in particular The *illustrations*, bibliographies and, above all, the condensed analyses of some of the most laborious researches which have been conducted in recent times are admirable Commenting on the limitations of pure laboratory research he remarks in respect of the intensive studies on vitamin D that the tendency has been to overlook the significance of other essential constituents of the diet which influence the calcification and growth of bone as, for example, calcium and phosphorus, deficiencies of which cannot be compensated for however much vitamin D is supplied In a case of rickets he holds that it is better to give cod liver oil than vitamin D by itself, since most rachitic children suffer from other forms of malnutrition than that due only to vitamin D deficiency, and the vitamin A and iodine in the oil tend to do them good In the chapter devoted to dental structure and disease he gives a clear and convincing digest of the researches of May Mellanby In the sections on the thyroid gland, nutrition and infection and nutritional influences on the nervous system many questions are put forward the answer to which will only be found by further research in the laboratory and observation in the wards, these include, for example the relation between hyperthyroidism and the state of activity of the pituitary and suprarenal glands dietetic factors influencing susceptibility to infection and nutritional treatment for degenerative conditions of the nervous system

The publication of this work is timely for the significance of nutrition to health and disease is *attracting world wide interest It is to be hoped that* Prof Mellanby's plea for wider clinical opportunity for the laboratory worker, including the actual control of beds, will meet with response, that this is in the interests of the patient and the community as well as of medical science is amply proved by the labours of those whose work is summarised, analysed, and criticised in this readable book

Allergy and Applied Immunology

Second edition By WARREN T VAUGHAN, M D, Richmond, Virginia London Henry Kimpton 1934 Pp 420 21s

THIS handbook on allergy is a practical treatise, which is nevertheless as fascinating as the early accounts of asthma and hay fever written in the nineteenth century by physicians such as Bostock Blackley, and Salter, before the discovery of anaphylaxis It is written in an easy, conversational style, and though it is addressed both to doctors and patients, it is not too erudite for the one or too simple for the other Readers of detective stories will be constantly reminded of Dr Thorndyke and the Munera Pulveris for Dr Vaughan is full of equally pertinent information, and practises the same painstaking investigation of his cases "Patience and stick to it iveness are most essential if the allergic wishes to get the maximum benefit from his treatment " he writes, and goes on to describe the 12 months of study which necessitated the placing of mould plates in each room of the patient's house before it was discovered that one of his patients was sensitive to a particular variety of mould in addition to cotton seed and cotton dust with avoidance of these substances he remained perfectly free from asthma

Dr Vaughan holds strongly the opinion that while conditions like asthma and eczema may be temporarily relieved by local treatment by medication and by general hygienic measures permanent relief can only be obtained by discovery of the allergens which are responsible for the symptoms and his book is largely a description of the common allergens and their detection It includes elaborate botanical surveys, biological classifications of allergens and analyses of common substances and illustrates the immense amount of detailed work that has been done on this subject in America We learn that over a third of the area of a [illegible] like [illegible] to grass and weeds with the [illegible] products of [illegible] you are sensitive to cotton seed you may get asthma after playing on a midget golf course, that rabbit fur masquerades under a variety of imposing names; that silk floss rarely owes anything to the silkworm, and that goat hair is present in summer suits and railway carriages

Dr. Vaughan is, we believe, wrong in thinking that general practitioners pay little attention to allergy, in this country at any rate many men in general practice have a keen interest in its capricious manifestations It may be true that "allergy is a very highly specialised field and one in which the family physician, as a rule, has little time to delve"; the same might be said about psychotherapy But most people with allergic diseases and psychoneuroses are quite unable to expend the time and money necessary for an elaborate investigation, and much good can be done in a simple way by doctors whose professional education includes the general principles of these specialties Dr Vaughan's handbook is an ideal introduction to the subject of allergy

Embryology and Genetics

By THOMAS HUNT MORGAN, Professor of Biology, California Institute of Technology, New York. Columbia University Press. London: Humphry Milford, Oxford University Press 1934 Pp 258 15*s*.

THE science of genetics, says Prof. Morgan, has now become so interwoven with that of experimental embryology that together they can now be held to tell a single story. Unfortunately this book tells it very badly It is addressed, we are informed on the dust cover, to "students in colleges and in medical schools that do not get, in their course in embryology, the broader philosophical outlook"—a vague dedication of which the wording is typical of the literary style of the book What is the broader philosophical outlook which students do not get in their course in embryology? It appears to be as follows The common meeting point of embryology and genetics is to be found in the relation between the chromosomes and the protoplasm of the cell wherein the influence of the genes comes to visible expression. Two views are commonly held as to the nature of this relation According to the first, all the genes are acting all the time in the same way; according to the second different batteries of genes come into action as development proceeds Both are open to objections which the author thinks may be surmounted by the following suggestion it is known, he says, that the protoplasm in different parts of the egg is somewhat different, and that the differences become more conspicuous as the cleavage proceeds, owing to the movement of material that then takes place From the protoplasm are derived the materials for the growth of the chromatin and for the substances manufactured by the genes The initial differences in the protoplasm in regions may be supposed to affect the activity of the genes These will then affect the protoplasm, thus starting a new series of reciprocal reactions.

Though the book contains short descriptions of an enormous number of experiments and is full of interesting material, it bears the signs of having been hastily written. The presentation is disconnected, and throughout the reader finds himself at one moment credited with ignorance of the simplest elements of embryology and genetics, and at the next with a specialised knowledge of these subjects He will find his mind oscillating between boredom with descriptions of familiar processes such as mitosis and meiosis, and total lack of comprehension in the face of some over-compressed account of a complicated experiment. After finishing the book he will certainly be convinced that much ingenious and subtle work has been done in the fields of both genetics and embryology; but he will find it difficult to convince himself that its author has effected a comprehensible synthesis between the two or that he has woven them together into "a single story." That Prof. Morgan's work on genetics establishes him as one of the constructive thinkers of our time is everywhere acknowledged. This very fact makes it especially regrettable that he does not take more trouble over the writing of his popular works.

Medical Bacteriology

Descriptive and Applied including Elementary Helminthology Second edition. By L E H WHITBY, C.V.O, M A, M D. Camb, F R C P Lond, D P H, Bacteriologist, Bland-Sutton Institute of Pathology, Middlesex Hospital London · J. and A Churchill 1934 Pp 338. 10*s* 6*d*.

THE purpose of this book is to give the overburdened medical student a reasonable minimum of knowledge, and this has been done in a conscientious way. The practical and clinical applications of bacteriology are everywhere emphasised and the student can rely on obtaining a sound knowledge of this aspect of the subject The short chapter on helminth infections is hardly adequate to teach the reader anything of importance about one of the most fascinating sections of medicine and biology, but is probably all that the qualifying student can digest in a last-minute effort to repair what is generally a hiatus in his learning and his teaching This does not come into the category of fully fledged text-books, it will appeal less to the student already fired with an interest in bacteriology for its own sake than to one whose bias is essentially clinical

The Span of Life

By FRANKLIN R NUZUM, B S, M D, F.A C P, Medical Director, Santa Barbara Cottage Hospital London · Baillière, Tindall and Cox Pp 108 9*s*

THIS book is designed to help the public still further to increase the span of life, which, according to Dr Nuzum, has already increased on the average by 25 years during the last 120 years To this end he has set out a brief account of the functions of the heart, kidneys, and blood-vessels, illustrated by simple diagrams The important changes which may occur in the structure of these tissues is related, the cause being given as far as it is known and suggestions for prevention; finally an outline for the proper management of bodies somewhat damaged by pathological processes once they are established is set out The book is written in such a way that a lay reader could readily understand it, whether its study would depress rather than invigorate him is another question. In the section on the symptomatology of heart disease undue fatigue is given as often the first sign to be noted, "a weariness for which there is no unaccountable reason," and further, "after a night's rest the individual may be as tired as though he had not slept", these pronouncements might well convince every neurotic who chances on this book to think he has heart disease The author's outlook will appeal to the middle-aged and elderly rather than the young

THE LANCET

LONDON SATURDAY, OCTOBER 27, 1934

THE MINISTER OF HEALTH AS JUDGE

THE critics of Whitehall bureaucracy will not overlook the Court of Appeal's decision in the Jarrow clearance order case. Property-owners in the clearance area said that the Minister of Health had not fairly exercised the quasi judicial powers entrusted to him by the Housing Acts. Mr Justice SWIFT thought that the Minister had acted correctly, the Court of Appeal thought otherwise. All the excitement that was occasioned by Arlidge's action against the Local Government Board nearly 20 years ago is likely to be revived.

The Jarrow town council, having framed its clearance order, a public inquiry was held at Jarrow by an inspector of the Ministry, several owners of property in the area then gave evidence that their property could be made fit for habitation by the execution of certain repairs which they were ready to carry out. A few months later the inspector called a meeting between the medical officer of health and the property-owners in order to get the parties to agree on the specific repairs. Agreement was reached but the town council still considered a demolition order to be required. After correspondence between the town council and the Ministry, it was proposed that a deputation from the council should wait upon the Minister. This course was not found acceptable, but it was arranged that three members of the Minister's staff should visit Jarrow. They did so last January, inspecting the area and interviewing the members of the council who had been proposed as delegates. On March 27th the Minister confirmed the clearance order. The property-owners applied to the High Court to quash the order on the ground that the Minister was required by the Housing Act to hold a public inquiry and to take into consideration the report and any objections. They complained that he had imperfectly exercised his quasi judicial function inasmuch as the January visit to Jarrow took place without their receiving notice and having an opportunity to be present. It also seems to have been the fact that a letter from the council to the Ministry put forward the views of the borough engineer who had not given evidence at the public inquiry. The gravamen was that the Minister had not observed the rules of natural justice, he had received evidence from, and had consulted with, one of the parties without allowing the other parties the chance to test or contradict that evidence, and, although the public inquiry was the prescribed occasion for receiving evidence, the Ministry had also received evidence outside the inquiry. In reply, it was contended for the Minister that the result of the inquiry was not binding on the Minister, he could not proceed on the result of the inquiry alone, he must, for instance, satisfy himself of the adequacy of the town council's finances, for this purpose he was free to obtain any material facts in an administrative rather than a judicial manner and could inform his mind in any way he pleased, provided that he acted without bias. Mr Justice SWIFT accepted this argument and declined to interfere with the clearance order, he held that the Minister had complied with the Act and could make his own inquiries if he did so fairly and honestly. But the Court of Appeal now says that it is not enough for the Minister to comply with the Act, he must obey the common law rule that a quasi-judicial officer must exercise his powers in accordance with natural justice, he must hear both sides and he must not hear one side in the absence of the other. The clearance order has therefore been quashed.

The House of Lords decided, in *Rex v. Local Government Board (ex-parte Arlidge)* that a departmental inquiry and quasi judicial decision need not follow the precise lines of litigation in the law courts. Mr Arlidge demanded the right to see the inspector's report and to reply thereto. His counsel talked about the common-law right of Mr Arlidge to "stand before his judge" and to "enjoy the bound and rebound of ideas and arguments between the bench and the bar" The judges of the House of Lords denied the necessity. Lawyers, they said, might prefer lawyer like methods, but, if the statute did not prescribe any special procedure for the department, the department could follow its own practice. Lord SHAW said it would be presumption for the judges to impose their own methods on administrative or executive officers, it was a wholly unfounded assumption to say that the methods of natural justice were ex necessitate those of courts of justice. Lord HALDANE pointed out that Parliament puts many duties on a Minister and cannot expect him to do everything personally, he must obtain his information vicariously through officials. Nevertheless the House of Lords left no doubt in Arlidge's case that the judges will interfere if a Minister's judicial functions are not fairly exercised, the justice may be "natural" and the procedure may be informal and non judicial but the functions must be exercised in good faith and uninfluenced by extraneous and irrelevant considerations. The Donoughmore Committee's report on Ministers' Powers vigorously recommended that in this respect the Supreme Court should not relax its vigilance. The recent [illegible] decision is important. It will compl[illegible] course of housing administration if it [illegible] unfair the omission to let any [illegible] all the correspondence which passes between the department and the local authority.

MENTAL HOSPITAL AS TRA[illegible]

As acquaintance with mental [illegible] recognised more and more [illegible] fair start in general [illegible] curriculum affords [illegible] gaining it. Even [illegible] in relation to psychiatry is different from what it is in relation to other general practitioner specialties such as pædiatrics or obstetrics If he wishes to learn more about these he can take a resident post for six months or a year, but to learn more about mental disorder he must join a service under certain obligations and restrictions, and he will find that a fair proportion of his time will be occupied with administrative duties which do not help him directly in his search for medical knowledge. At one mental hospital at all events the obstacles in the way of providing short-term resident post-graduate posts have been overcome. Authority has been obtained by the Hill End Hospital for Mental and Nervous Disorders (alias the Herts County Mental Hospital) at St Albans for the appointment of two house physicians for 6 or 12 months The posts are held under the usual conditions of temporary resident appointments, and administrative duties peculiar to the mental hospital service are reduced to a minimum as regards the house physicians. They will be taught, with special reference to subsequent work as general practitioners, how to recognise mental disease, how to deal with it in its minor forms, and the physical problems associated with the care of frank psychoses. The man or woman who is appointed to one of these posts at Hill End will find all that is newest in mental hospital treatment

The scheme for the appointment of house physicians is only one of the constructive ideas that are materialising there The nurses, for example, get a thorough grounding in psychiatric approach, and they all undergo training in occupational therapy and socialisation. It is hardly a coincidence that this hospital has seldom been short of nurses, there is in fact usually a waiting-list There is also an out-patient and child guidance clinic. The medical superintendent sees patients at the general hospital as a member of its honorary staff, selecting from among the out-patients those suitable for intensive psychological treatment at the mental hospital clinic. The patients reach this clinic without passing closed wards or being aware of any restraint, and are there treated by a visiting psychiatrist from London The medical superintendent, while admitting that the claims of administration make the devotion of time to psychotherapy to any adequate extent almost impossible, also points out that his position as head of the institution is inseparably associated with an authority which might, perhaps must, be a hindrance in psychological treatment. The clinic is run on the team principle. A trained worker formerly on the staff of one of the London voluntary hospitals is in charge of social work, home visiting, and after-care There is a psychologist, through whom vocational guidance and remedial coaching can be arranged for patients. And there is a playroom for investigation of children

The committee of the hospital has approved the provision of two bursaries for training post-graduate psychiatrists and social workers, and the whole clinic is designed to be a teaching centre. The house physicians may attend the bi-weekly clinic conference, where cases and methods are discussed. Patients come to the clinic from sources other than the hospital out-patient room, educational authorities, social agencies, probation officers, private doctors, and others supply them Selected in-patients from the hospital come for treatment, and here they may continue their treatment without interruption after discharge. The hospital is to be congratulated on the foresight and generosity of a committee which has approved these measures and has endowed the first year's working of the clinic.

HYPERTHYROIDISM AND HIGH BLOOD PRESSURE

WITHIN the last few years it has been realised that excessive thyroid secretion is often responsible for cardiac disorders—especially in women from middle age onwards—and that the heart may be suffering damage even when the classical picture of thyroid intoxication is inconspicuous or incomplete In medicine an advance in one direction is apt to bring progress in another, and the use of subtotal thyroidectomy in these cases of "masked hyperthyroidism" has led by chance to the discovery that in patients with heart disease the removal of the thyroid may be very beneficial even when the gland is normal. Since BLUMGART, LEVINE, and BERLIN originally reported this[1] a considerable number of cardiac invalids who had failed to respond to other measures have had their thyroids removed, and it appears that in all forms of organic heart disease the immediate effect on symptoms is favourable—a conclusion lately supported by some encouraging results obtained in this country[2] It now seems possible that the study of toxic goitre in those past early womanhood will throw light on another symptom—namely, arterial hypertension.

The diagnosis of "essential" hypertension, or high blood pressure of unknown origin, is still required all too often, but the list of conditions with which hypertension is associated is rapidly extending—including, as it does, those which interfere with renal function, toxæmias such as those of lead and pregnancy, and certain endocrine disorders, notably some tumours of the suprarenal and the basophil adenoma of the pituitary. The bearing of some of these conditions on the problem of high blood pressure as a whole was discussed by Prof DE WESSELOW in the Croonian lectures;[3] and in our present issue Dr. PARKINSON and Dr HOYLE discuss particularly the relation between arterial hypertension and thyroid activity In classical Graves's disease seen in a young adult or adolescent the systolic blood pressure is moderately raised while the diastolic is either unaffected or rather lower than normal. But in the thyrotoxicosis of the middle-aged many observers have found, in a high proportion of patients, true hypertension in the sense that both systolic and diastolic pressures are permanently high, and although this is the age when high pressure is common, the frequency of its association with goitre seems to be more than accidental. However, while PARKINSON and HOYLE think that goitre and hypertension are in some way related they do not suppose thyroid over activity to be the sole cause of the rise in blood pressure. The combination is seen chiefly in women between the ages of 40 and 70; the sex incidence in their series of 100 cases is much the same as that of thyrotoxicosis in general (that is, about 90 per cent females) but in strong contrast to that of hypertension in general which affects men and women about equally. In diagnosis the presence of even one or two of the general effects of thyrotoxicosis, such as wasting, nervousness, weakness, tremor, and sweating, is held to be suggestive, together with an enlarged thyroid as judged by clinical or (with retrosternal goitre) radiographic examination. As a rule, however, the enlargement is slight, and it must be carefully sought, since very small goitres are capable of doing much harm to the cardiovascular system; and though it may be true that the thyroid cannot be toxic when it remains normal in size, it can undoubtedly be toxic at a time when no enlargement can be made out before operation. Exophthalmos, again, is often absent, and estimation of the basal metabolic rate gives little help in diagnosis, since it is not necessarily raised in cardiovascular disease of goitrous origin and, on the other hand, may be raised in diseases unconnected with the thyroid. Indeed, measurement of the impedance angle, the new method of diagnosis dependent on certain electrical properties of the body,[4] seems to be a more specific test of thyrotoxicosis than estimation of the basal metabolic rate, and if its early promise is fulfilled it should be of great value in distinguishing the type of case under consideration. As for the cardiovascular symptoms the commonest, apart from dyspnœa, is palpitation, and this depends on either a simple tachycardia or auricular fibrillation. Both are very important from the diagnostic point of view. Long persistent simple tachycardia is uncommon in arterial hypertension before the stage of heart failure, and auricular fibrillation is rare at any stage; hence the significance of PARKINSON and HOYLE's finding that 90 per cent. of their patients had either tachycardia with normal rhythm or auricular fibrillation. Though the diastolic pressure is usually high (90 mm. Hg or more) the pulse pressure, as in Graves's disease, is very often increased. On radiography the heart may show the features found in unselected cases of toxic goitre—that is, some general enlargement, together with prominence of the pulmonary artery—while particular enlargement of the left ventricle and uncoiling of the aorta testify to high arterial tension present or in the past.

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[1] Blumgart, H L, Levine, S A, and Berlin, D. D Arch. Internal Med., 1933 li, 866 See THE LANCET, 1934, i, 3

[2] Brenner, O, Donovan, H, and Murtagh, B L S Br. Med Jour, Oct 6th, 1934, p 624

[3] de Wesselow, O L V: THE LANCET, Sept 15th, 22nd, and 29th, 1934

The recently recognised importance of thyrotoxicosis as a cause of auricular fibrillation, both in its paroxysmal and permanent forms, has led us to suspect the thyroid when there is no other obvious cause for the arrhythmia. Similarly we should now be led to think of a thyroid factor when there is hypertension, either coupled with tachycardia and high pulse pressure or associated with auricular fibrillation. When there is fibrillation it may be impossible, with the manometer, to determine the presence of high arterial tension, but evidence of its existence in the past may be seen in the typical radiographic changes. In treatment subtotal thyroidectomy is considered advisable, as in toxic goitre generally, for a majority of patients. The surgical treatment of goitre is admittedly a makeshift which leaves much to be desired, but it remains the method of choice in a high proportion of all forms of the disease; one can only hope that the future may provide something less drastic, and the recent production of a serum inhibitory to the pituitary thyrotropic hormone[5] is presumably a step in the right direction. Whether operation is considered necessary or not, iodine will rightly find a place in treatment. An old remedy among the many prescribed for hypertensives, iodine has lately been largely discredited, but it may well be asked whether in some of the cases where it seemed to do good it has not done it through the thyroid. On the other hand, thyroid extract, sometimes used for hypertension in women at the climacteric, can do nothing but harm and must be withheld unless thyrotoxicosis can be fully excluded. The effect of thyroidectomy on the cardiac symptoms of toxic goitre is often remarkable, and it can turn a bedridden patient into an almost normal person; the level assumed by the blood pressure after operation is the subject of various opinions, but apparently it often remains high. Sometimes the hypertension may fall into the category of permanent and irreversible changes to which Sir THOMAS DUNHILL has drawn attention; they are the result of long standing thyrotoxicosis, and although thyroidectomy may be well worth while, they cannot be abolished by operation. But even if treatment will not always favourably affect arterial hypertension associated with goitre, its recognition as a symptom of this disease, and the attention that this directs to what otherwise might escape notice, is of importance.

THE scholarship offered by the Association of Surgeons of Great Britain and Ireland and announced in our advertisement columns is designed for the assistance of young surgeons possibly not yet on the staffs of hospitals who may wish to spend a year in special study or research. The wording of the condition applying to it is left purposely vague so that candidates may propose any kind of surgical work. For example laboratory or clinical research may be offered alone, or combined with travel. The scholarship may also be held as an assistance in travelling to various surgical centres. A scholar will be expected to devote the greater part of his time for a year to the scholarship but the holding of a part time appointment does not preclude election to it, although a registrarship would hardly be regarded as compatible.

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[4] Brazier, M. A. B.: Brit. [illegible], 1933, ii., 742; Oct. 27th, 1934, p. 879.

[5] [illegible], J. B., and Anderson, E. M.: [illegible]

ANNOTATIONS

POVERTY AND RHEUMATIC HEART DISEASE

THAT the incidence of acute rheumatism falls with peculiar severity upon the poorer classes has been clearly recognised in this country, although there has been some interesting divergence of opinion about whether it is the very poorest who suffer most In a report to the British Medical Association Dr. Reginald Miller concluded [1] that in England rheumatic infection is essentially one of children of the artisan class living in damp rooms in an industrial town, attending an elementary school and suffering from tonsillar sepsis Conditions of great poverty, destitution, underfeeding, overcrowding, excessive dirtiness do not, he said, seem to have an influence specifically towards rheumatic infection Poverty is an all-important factor but it does not explain the whole question Why are the poorest seemingly protected by their circumstances? What decides the distribution of the disease within the artisan class? It is not, Dr Miller said, the financial condition of the affected family In an inquiry made simultaneously in London and Glasgow under the auspices of the Committee for Child Life Investigation it was felt by the investigators [2] that in view of the heavy incidence of rheumatism upon children of the hospital class, as compared with that upon children of the wealthier classes, it might be expected that the incidence of rheumatism amongst the former would be in direct relation to the degree of poverty. That however was found not to be the case When the hospital patients were divided into three classes according to the degree of poverty, the poorest of these three—the very poor and destitute—showed in comparison with the other classes no abnormally high incidence of rheumatism This committee drew the conclusion that if poverty is a factor in the incidence of rheumatism it must be on account of some condition or conditions associated therewith which are not equally present in all degrees of poverty In the preface to a report on acute rheumatism in children issued in the same year [3] by the Ministry of Health, Sir George Newman asks us to accept these observations with considerable reserve, although he admits that they coincide with previous observations by R. Hutchison (London), A P Thomson (Birmingham), V. M Coates and R E Thomas (Bath) He adds that Mrs Forest Smith's findings in out-patients at St Thomas's Hospital suggest that the poorer the home the greater the risk But to draw this deduction Sir George must have other material than is contained in the report itself In a more recent study of rheumatic disease in children Dr Maurice Campbell and Dr. E C Warner record [4] their impression that the poorest are the most commonly affected and that rheumatism is certainly as common in them as in children of the artisan class

In a series of studies of American children Prof. John R Paul, of Yale, and his associate workers are attempting to assess numerically the importance of the economic environment in their country In a first study [5] Paul and Leddy devoted attention to a group of Yale University students and found that among men who had attended expensive boarding schools the incidence of rheumatic heart disease was less than half that among men from the high schools In a further study,[6] by Paul, Harrison, Salinger, and De Forest, the focus has been transferred to the school-children of New Haven, Connecticut Study of the data from the routine examinations of nearly six thousand public school-children performed by school physicians suggested that systolic murmurs, presumably of rheumatic origin, were roughly one and a half times as prevalent among children from the poorer districts than among those from the better districts of the city. Smaller groups of children were re-examined by Prof Salinger, the reduction in the size of the sample being compensated for by the advantage of the employment of more definite and uniform diagnostic criteria on the entire group. Considerable differences in the economic grades were thus discovered. The highest incidence of rheumatic disease was found among 332 male pupils attending a "poor" urban public school (48 1 per 1000), and this rate was 50 per cent in excess of that found among 258 pupils attending one of the "good" urban public schools and eight times as high as that among 163 pupils attending private urban schools from the best residential sections of the city. These results suggest to the authors that rheumatic heart disease has a low incidence among the relatively small group of children who come from the homes of greatest affluence, but that it has a high and far less differentiated incidence throughout the remaining 95 to 98 per cent of the population Their next step they conclude must be a more intimate study of some small communities in which they can relate poor and fair-living conditions to the prevalence of rheumatic fever.

AUSCULTATORY PERCUSSION IN ASCITES

ABDOMINAL distension, shifting dullness, and a "fluid thrill"—by these signs were we taught in our youth to look for and recognise ascites. With growing experience came the knowledge that in a doubtful case, with only slight distension, the fluid thrill was rarely to be felt, and even a search for shifting dullness might leave uncertainty In a recent paper from France we are offered a new physical sign, characteristic of ascites, and obtainable when the collection of fluid is too small to be demonstrated by other clinical means That is the claim made for the "double bruit ascitique" of Lian and Odinet [7] To elicit this sign one taps or flicks the patient's abdominal wall with the finger, in one iliac fossa, while auscultating in the other The stethoscope is applied lightly, it may be monaural or binaural, but its chest-piece must be conical in shape and free from any sort of diaphragm In the normal abdomen the blow of the finger is heard through the stethoscope as a single brief sound, its pitch varying with the state of the abdominal wall. When ascites is present the same sound is heard but it is followed at a distinct interval by a characteristic second sound, which is longer and louder than the first and which coincides in time with the fluid thrill when that is obtainable Lian and Odinet attribute it, along with the fluid thrill, to the wave of displacement set up in the sea of ascitic fluid by the stroke of the finger Incidentally the fluid thrill or transmitted thrill is known in French as "le flot ascitique," a name which indicates its mechanism and its nature

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[1] Brit Med Jour, 1926, ii, Suppl, p 5

[2] Medical Research Council, Special Report Series No 114, 1927.

[3] Reports on Public Health and Medical Subjects, No 44, 1927

[4] THE LANCET, 1930, i, 60

[5] Amer Jour Med Sci, November, 1932, p 587

[6] Ibid, September, 1934, p 301

[7] Lian, C, and Odinet, J Presse méd, August 25th, 19 p 1337

—for it is a single impact, not a vibration—much better than the English "thrill"

The value of this auscultatory sign will be learnt only by test, but its sponsors quote cases where it was present several days before a developing ascites was demonstrable by other means, or where its absence strengthened a diagnosis of ovarian cyst, afterwards confirmed To disarm the sceptic they have made electrical records of the single sound of the normal abdomen and the ascitic double sound[8] There remains the question whether other clinicians can elicit it in cases of ascites of small amount, otherwise difficult of recognition If they can, the new sign, which appears plausible and involves much less acrobatics than circum umbilical percussion in the knee chest position may well claim to be included among routine clinical methods

OPTICIAN AND OCULIST

A LARGE proportion of insured patients who apply to approved societies for ophthalmic benefit are referred to prescribing opticians for treatment and not to the oculists appointed by the National Ophthalmic Treatment Board At the representative meeting of the B M A held at Bournemouth in the summer, Mr Bishop Harman argued that this is not in the best interests of the patients These opticians are trained to do refractions and provide suitable glasses but they do not profess nor are they qualified, to provide any further treatment An analysis of over 10,000 cases seen by 47 of the Board's specialists shows[9] that only in 64 per cent of the cases referred to them was the prescription of glasses the only treatment needed In the remaining cases, eye conditions were found either not requiring glasses at all or requiring other treatment in addition to glasses In a few cases (1 per cent) there was no appreciable eye defect at all Of course, the opticians are supposed to refer any case with which they are not competent to deal to an ophthalmic specialist, but from returns supplied by certain approved societies it was ascertained that the proportion of cases in which this was actually done was only about 3 per cent It follows that more than a quarter of the patients referred to opticians do not receive the treatment to which they are entitled It may be said that the modern optician receives a training quite sufficient to enable him to recognise serious conditions but the fact remains that according to these figures many serious conditions must have been missed The "other eye conditions" coming under the notice of the oculists who provided the statistics included roughly 7 per cent of diseases of the conjunctiva lids or sac 8 of opacities of the lens 5 of diseases of the uvea, and nearly 5 of constitutional or ocular affections presumably revealed by fundus conditions Incipient glaucoma needs considerable skill to diagnose and, though it is rare the possibility of its occurrence in those requiring glasses for failing sight is a reason for referring them in the first place to an oculist Mr Harman's paper affords strong evidence in favour of the conclusion of the departmental committee on the Optical Practitioners Bill 1927, which reported that they were satisfied that the number of cases in which the patient may miss the opportunity of remedial treatment if the case is not handled by an oculist is by no means negligible

Commenting on this report, the *Optician* questions[10] Mr Harman's deduction from his statistics The 10 085 cases analysed may not be typical, of the people who consult ophthalmic specialists it is inevitable that a large percentage should have diseased conditions in comparison with the people who ordinarily consult sight testing opticians. The percentage of cases referred by properly skilled opticians is higher than that quoted by Mr Harman, who, it is suggested, takes no account of the many cases referred by opticians to general medical practitioners How far these considerations may reduce the significance of Mr Harman's statistics it is not easy to say, but they can hardly bridge the gap between 3 and 30 per cent

BRITISH POST-GRADUATE MEDICAL SCHOOL
AN IMPORTANT VACANCY

A NOTICE will be seen in our advertisement columns to the effect that the governing body of the British Post Graduate Medical School requires a dean the present dean Dr M H MacKeith having retired for reasons of health At a meeting of the governing body of the school last week it was decided to throw open the post to the medical profession by advertisement, a policy which we think will appeal to our readers, for the claims of as wide a range of candidates as possible can then be scrutinised It is vexatious that at the last stage of development the services of an important executive officer should be lost to the school but this makes it all the more welcome that the professorial staff and the readerships have already been fully appointed—and we may say that the school has been particularly fortunate in the selected personnel The new buildings will be opened at the end of this year, and during the first three months of 1935 the staff will get into working order by taking over the wards and out patient and various departments as from Jan 1st next Thus the school should be open for teaching purposes about April 1st, 1935, the school council is already holding regular meetings at which the details with regard to the courses of instruction are being carefully worked out

THE INVESTIGATION OF PAIN

THE special senses are the avenue for most of our contacts with the real world and full study of our manner of using them must be as "dynamic" and profitable a branch of psychology as any analytic or other restricted method, possibly in the event more so Pain has not received as much attention as hearing, vision, and touch because of the difficulties of experiment It may be also that pain has had for the purposes of psychopathology less relevance than these others to hallucinations and other phenomena of mental illness The full consideration of the integrated response to pain stimuli is however, of importance to psychology and psychiatry Those with mental disorders do not cease to respond to pain Painful stimuli may have influence on their [illegible], but this has little to do with what is sometimes called "mental pain" Here it is necessary to distinguish between false verbal similarities Neither physiology nor personal knowledge justifies such a [illegible] To speak of a "painful experience" as though the terms were being strictly used and the known phenomena of pain were in question is to darken counsel as it has so often been darkened [illegible] through misuse of words It is not by [illegible] or inapt transfers of knowledge that [illegible] somatic phenomena can come to be [illegible] Premature interpretation [illegible] proceeds from hasty [illegible] hypotheses or [illegible] metaphor. In a recent detailed study[1] of the clinical features of depression, Dr Aubrey Lewis has shown afresh how essential a preliminary is the full description of the phenomena, if from such common defects as those mentioned there are not to arise false theory and false practice There is, however, another and sounder way (which may, briefly, be called the phenomenological) of aiming at the integration of physiological and psychological data than that once applied to aphasia and still used for retardation and inhibition.

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[8] Bull et mém Soc méd des hôp de Paris 1934 [illegible] p 140

[9] Brit Med Jour Oct 6th 1934 Suppl p [illegible]

[10] Optician Oct 19th 1934 p [illegible]

There can be few who are not dissatisfied with the seeming changeableness and uncertainty of a large part of the data to which psychiatrists apply their verbal symbols and their methods of study. There can be no fixity of material investigated, no adequate testing of conclusions, until functions have been defined in constant terms These terms must be psycho-biological They can only be applied after intensive study of the somatic foundations—genetic, constitutional, and physiological—and their associations with mental phenomena.

PANEL DENTISTRY

LAST year under the National Health Insurance Acts approved societies expended about £2,000,000 on dental benefit for their members, who qualified for this treatment by spending a like amount out of their own pockets Anyone on the Dentists Register, whether possessing a dental qualification or not, is eligible to treat insured persons and it is not surprising that complaints should arise, whether against dentists by insured persons or approved societies acting on their behalf, or by dentists against approved societies The Dental Benefit Council, which consists of dentists, representatives of approved societies, and an official of the Ministry of Health, provides machinery for investigating such complaints and can institute disciplinary action against either party, even to the extent of debarring a dentist from undertaking panel work The machinery closely resembles that of medical benefit, and all parties have the right of appearance Many of the so-called complaints against dentists are simply questions of disputed interpretation referred by societies to the Council without any allegation of incompetence on the part of the dentists concerned. Cases of deliberate breach of the regulations or of actual bad workmanship are, in relation to the vast amount of panel dentistry, comparatively few Some cases of "contracting out" still occur In the past this usually took the form of the dentist undertaking to supply work of better quality for an additional fee to be paid by the patient It is a pathetic result of present-day industrial depression that contracting out now takes the form of the dentist arranging to forgo the whole or part of the fee payable by the patient without the knowledge of the approved society Denture cases provide a large proportion of complaints and there has been an increased failure to provide satisfaction in this respect. It is highly probable that some of these are due to failure on the part of the patient to give that co-operation which is essential in dental prosthesis This is difficult to prove and the dentist generally must bear the brunt of the failure even though the patient is at fault. It is interesting to note in the Council's report[2] that cases demonstrating a lack of skill in conservative work are becoming more common In the past the greater part of panel dentistry consisted in the extraction of teeth and the provision of dentures, but the cumulative effect of dental benefit on the insured population over many years is now being felt. Arrears of extractions, and consequent prosthetic treatment, tend to decrease; there is greater demand for conservative dentistry and a greater appreciation of its value But it is here that deficiencies on the part of 1921 dentists show themselves Some of them have little skill in this branch of dentistry and practise it rarely, complaints arising on this ground are hardly surprising and reflect only on a small section of the profession, which as time goes on will steadily decrease, for all dental entrants must have had a hospital training and thus be fully versed in the conservation of teeth From the way in which this report has been handled in a section of the press it might be supposed that the whole dental profession was incompetent and engaged in wholesale exploitation of the insured population. So far is this from being the case that the Council, which contains a large approved society element not likely to be unduly tender towards delinquency, says "there is every indication that the standard of the service has not only been maintained during 1933, but has definitely improved both as regards the adequacy with which the dental needs of the insured population have been diagnosed and the satisfactory manner in which the authorised treatment has been carried out" The report itself is a sufficient refutation of such headlines as "Growing evils of panel dentistry."

TYPHUS FEVER ITS PREVALENCE

THE September issue of the *Bulletin* of the International Office of Public Health contains what amounts to a review of typhus fever in the world at present According to Dr E. H Cluver, who contributes the report on typhus in *South Africa*, the disease has for long been endemic in the native areas in the eastern part of Cape Colony The period 1919–1923 may be regarded as epidemic, when the average number of notifications exceeded 8000 annually In 1924 they fell to 2000 and did not reach this figure again until 1933, when they numbered 2125, the rise being due partly to the loss of immunity acquired during the epidemic, and partly to aggravation of the economic situation Owing to their deplorable lack of hygiene heavy infestation with lice and malnutrition, the disease was more frequent and fatal among the natives than among the Europeans, as is shown by the fact that during the period 1923–33 the European cases amounted to only 544 with 24 deaths (4 4 per cent) as compared with 22,204 cases with 3005 deaths (13 5 per cent) among the natives Dr Lasret, the delegate for *Algeria*, reports that in 1933 847 cases were notified in that country as compared with 34 in 1932 The increased incidence, however, only occurred in the Constantine department, where there were 769 cases in 1933 as compared with 276 in 193. In all the other departments the incidence remained the same or was on the decline In *Chili*, according to Dr. Leonardo Guzman, director-general of the Ministry of the Interior, an epidemic of typhus has been in existence since 1917, reaching its height in 1919 with 14,517 cases and 2804 deaths During the next five years there was a decline, but recrudescences subsequently occurred, and during the period July, 1933, when Dr Guzman assumed his present position, until Jan 1st, 1934, there were 15,194 cases with 3258 deaths (21 4 per cent) throughout the country. Eighteen departments were heavily infected while sporadic cases occurred in the rest In his surv of the disease in the *U S A*, Dr Hugh S Cumming, surgeon general of the Public Health Service stated that during the last two years endemic typhus had shown a tendency to spread to the country districts, this invasion being preceded or accompanied by an increase in the rural population of rats from which the disease is transmitted to man by the same flea which transmits plague In his report on typhus in *Rumania*, Prof Danielopolu remarked that the case fatality (9 per cent) at the present time was considerably less than it had been during the war when it had exceeded 20 per cent Apart from the years 1916–18, for which no statistics were available the highest number of cases (56 042) was reached in 1919 The number subsequently fell until a minimum (1377 cases) was reached in 1931 followed by recrudescences in 1932 (1787 cases) and 1933 (1805 cases) As regards *Soviet Russia*, Prof Syssino of Moscow reported that systematic studies of the ætiology epidemiology diagnosis and specific treatment had recently been carried out in the numerous institutes of epidemiology and microbiology throughout the country The most important conclusions reached had been first the long duration of the infectivity of lice amounting to two months after the termination of an outbreak, and secondly the biological differences between the virus of endemic typhus and that of the epidemic form Specific vaccine prophylaxis and serum treatment in Soviet Russia as in Rumania appear to be still in the experimental stage

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[1] Jour Ment Sci , 1934, lxxx , 1 and 277; see THE LANCET, 1934, i , 1239

[2] Appendix xxxiii , Fifteenth Annual Report of the Ministry of Health, p 365

SENSATIONAL CANCER REPORTS

THE October number of the *Monatschrift fur Krebsforschung* contains a report on the scientific congress held in the first week of September at Frankfort on Maine under the chairmanship of Prof W Kolle All the members of the congress had been personally invited, and about fifty workers from abroad accepted the invitation At one of the meetings the claim of Dr W v Brehmer to have discovered the causative organism of cancer[1] was discussed and criticised As a result Prof Kolle issued a statement to the press in which he expressed his doubt concerning this discovery, and deplored the manner in which it had been broadcast An even more strongly worded protest was issued to the press by the German Government and by the president of the Reichs Gesundheitsamt These declarations reproduced in the same number of the *Monatschrift*, warn the public against accepting Brehmer's claims to have discovered new methods of diagnosis and treatment No sooner had this sensation been disposed of, than a new one made its appearance Dr Klein, who is working in the biochemical laboratory of the I G Farbenfabriken at Ludwigshafen, read a paper in which he claimed to have succeeded in isolating from mammalian tumour an "agent" by which he could transmit cancer to other animals without the intervention of living cells He assumes the existence in the animal organism of substances capable of destroying cancer cells, basing this view on work of Freund and Kaminer published 25 years ago which has not hitherto been accepted as valid Dr Klein further claims to have elaborated a method of diagnosis based on the presence in normal blood of these cancer cell destroying substances which makes it possible to distinguish between a healthy person on the one hand and a person who is either suffering from cancer or liable to develop cancer on the other In order to prove that a person, who is free from cancer, but who has responded to a test indicating liability, has later developed cancer, a history would be required of at least 20 years The test had been applied in a number of hospitals, and although the work has apparently been carried out only over a short period, it is stated to have given 95 per cent of correct results Lastly the claim is made that by concentrating these protective substances in certain tissues a means has been found for the treatment of cancer Dr Klein's claims amount to nothing less than a complete solution of the cancer problem, and their detailed publication will be awaited with expectation, tempered by the memory of the discovery only last year of a cancer remedy based on Fichera's work which seems to have been abandoned.

THE NEW WESTMINSTER HOSPITAL AT BRITISH INDUSTRIES HOUSE

THE equipment of the new Westminster Hospital, to be built at St John's gardens, Millbank will be a very big undertaking With a view to affording assistance to hospitals in general, and to the Westminster Hospital in particular, the directors of British Industries House at Marble Arch have put forward a suggestion, which has been accepted and is now taking shape The scheme is to erect on the ground floor, adjacent to the model hospital [illegible] suites of rooms in accordance with the [illegible] submitted to the building committee of the Westminster Hospital The first suite of [illegible] nearing completion and will soon be [illegible] for the reception of equipment by manufacturers [illegible] of securing hospital business This [illegible] matron's and nurse's rooms, compl[illegible], lavatories, shampoo rooms, and [illegible] rooms have served their purpose [illegible] of suitable articles has been made [illegible] Hospital committee, the suite will [illegible] and replaced with other rooms, all [illegible] Since at least two years must elapse [illegible] hospital is completed, this new section [illegible] interest to those entrusted with [illegible] or maintenance elsewhere, and [illegible] of saving time and money [illegible] open daily to all interested in hosp[illegible] on presentation of a professional card.

DR CHRISTINE MURRELL

LAST May, at a [illegible] Women's Federation in Sheffield [illegible] was expressed that the services of [illegible] to medical women should be [illegible] Dr Murrell was [illegible] treasurer of the Federation [illegible] considered that her [illegible] without not on her [illegible] her well known [illegible] recognised just [illegible] General Medical [illegible] Federation [illegible] than the work [illegible] some [illegible] and [illegible] made [illegible] outside the [illegible] to all the [illegible] raised [illegible] the Federation [illegible] that [illegible] further [illegible] practice should be instituted, an object that would have specially appealed to Christine Murrell; and already a small sum has been raised Donations will be gratefully acknowledged by Dr Violet Kelynack, 9, Clifford-street, London, W. We hope satisfactory responses may be obtained to the appeal In the current *News-Letter*, the magazine of the Federation, it is stated that the administration of the fund, and indeed the exact method of its employment, will be settled in accordance with the amount of support received.

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[1] See THE LANCET Sept. 15th 1934 p 639

A GASTROTROPIC HORMONE?

THE experimental production of lesions precisely localised in the fundus of the stomach by injection of extracts of the posterior lobe of the pituitary gland is described by Prof Dodds and his collaborators on another page The observation has been repeated 40 times, using an extract prepared by the acetone-picric acid process, and has also been made on animals to which the standard B P extract had been administered in massive doses subcutaneously and by mouth Extracts of certain other tissues of the body were found to be inert in this respect, as was also the oxytocic factor of the posterior lobe when separated from the pressor factor The fraction containing pressor factor produced the typical lesion, and the question arises whether the phenomenon is due to a hitherto undiscovered property of this hormone or (as seems more likely) to some new substance which is gastrotoxic in large doses It is noteworthy that the inflammatory lesion is confined to the acid-secreting area of the stomach, the œsophagus, duodenum, and the distal third of the stomach remaining normal in appearance Whether the substance has a direct toxic action on the acid-secreting cells, or whether it stimulates secretion of hydrochloric acid to a damaging extent, is not yet clear The latter mechanism would be analagous to that by which prolan, produced by the anterior lobe of the pituitary, passes in the blood-stream to the ovary and testis, and there initiates changes resulting in the production of internal secretions It is, however, premature to speculate on these possibilities The group of workers at the Middlesex are evidently hot on the scent and may be relied on to negotiate the most formidable obstacles in forcing their quarry into the open

CHOLERA IN INDIA

CHOLERA has come to the front again in India. The last great epidemic, in 1927–28, was followed by a lull; outbreaks became fewer and the years 1931 and 1932 had remarkably few deaths During the early part of 1933 Bengal had more than its share of cholera with 6160 deaths in the first and 6516 deaths in the second quarter. Bombay and Hyderabad were affected in the second quarter of 1933, the usual season for cholera in western and northern India When the epidemic was becoming quiescent in Bengal during the third quarter a few cases were occurring in Assam The infection travelled eastwards from the Mymensingh district of Bengal through Sylhet to Cachar After smouldering for a short time in Cachar, the epidemic flared up and returned downstream from east to west, causing over 2700 deaths in the districts of Cachar and Sylhet The Habigung subdivision of Sylhet, where, as we noted in a leading article on July 7th, bacteriophage had been distributed, was the only subdivision to escape Cholera now reinvaded Bengal through Mymensingh and Tippera, and cases increased till during the first week of April there were in Bengal 1075 deaths Behar and Orissa now lighted up and cases began to appear in the Central Provinces, the United Provinces, Bombay, the Punjab, and in the north-east of Madras in the district adjoining Bengal The Central Provinces had over 13,500 deaths during June, July, and August Bombay had 3441 in three weeks during August In Berampore in the north-east of Madras the Calcutta *Statesman* correspondent wrote "the roads are almost blocked by processions of bullock carts conveying the bodies of victims to the funeral pyres"

This spread of cholera has occurred after an interval of six years—the normal period for such epidemics in western and northern India The periodicity is well known, but steps to break it, if any, have not apparently been successful, except the effort in Assam Such an opportunity to gauge the value of preventive measures against cholera, if the normal periodicity continues, may not come again till 1939–40, but we may hear more of what has been learned in this epidemic.

ON Thursday, Nov 8th, a soirée will be held at the Royal Society of Medicine when Prof Arturo Castiglioni will give an address in English entitled "The Ancient University of Padua and its English Scholars" On the previous afternoon, Wednesday, Nov 7th, at 5 P M, Prof Castiglioni will read a paper before the Section of History, also in English, entitled "Morgagni and the School of Anatomy in Padua" Prof Castiglioni occupies a position which will make it right that he should obtain good audiences, and anatomists and surgeons are as likely to be interested in his deliveries as students of medical history The meeting at the Section of History is open to Fellows and visitors without tickets

DR Edward A Gregg is standing in opposition to Mr Bishop Harman for the seat on the General Medical Council, as a direct representative for England and Wales, which becomes vacant on Nov 26th Dr Gregg sets out his claims as follows. He has been for 25 years engaged in panel practice, has been actively associated with medical organisation during the whole of his professional life, and has been concerned largely in municipal affairs His policy of reform includes an increase in direct representation, modifications in medical education, and alterations in the disciplinary procedure of the council With regard to these latter proposals he advocates that the views of the whole profession should be taken Dr. Gregg has been Mayor of St Pancras and chairman of most important committees of that borough

UNDER the presidency of Prof W. Langdon Brown the International Congress on Life Assurance Medicine will be held in London from July 23rd to 27th 1935 The chief subjects of discussion will be methods of estimating risks, the prognosis of hypertension, the acceptance of glycosurics, gastro-intestinal ulceration and life assurance, and the rôle of health services in life assurance The conference is the first of its kind since 1903, and the first to take place in this country We are informed that for practitioners resident in Great Britain and Ireland membership is restricted to members of the Assurance Medical Society, and to "such other practitioners as are interested in life assurance and whose applications for membership is approved by the congress committee" The chairman of this committee is Dr Theodore Thompson, and the hon secretary Dr Otto May, who should be addressed at 142, Holborn Bars, London, E.C 1.

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXIV —PROGNOSIS OF BRONCHIECTASIS IN ADOLESCENTS AND ADULTS

THE advance in our knowledge of bronchiectasis which has come about largely through the introduction of lipiodol as an opaque medium for bronchography, has increased, rather than otherwise, the difficulties in making a prognosis A knowledge of the probable future of those afflicted with this potentially hideous malady is more essential than ever, because of the rapid progress in the surgical treatment of this condition We are frequently confronted with questions such as Do the symptoms warrant an extensive and even risky operation in a case where the symptoms may be slight? Does the prognosis warrant it? The prognosis, therefore, becomes not merely shrewd prophecy, but a matter upon which most important and urgent decisions may depend By the use of lipiodol we can almost certainly prove or disprove the existence of bronchiectasis, we can estimate its extent, type, and distribution, we can demonstrate unequivocally the presence of what is clinically, entirely latent bronchiectasis, though anatomically it may be gross in so far as the extent and size of the dilatations are concerned

Since it is now possible to determine by radiography and bronchoscopy whether the bronchiectasis is obstructive or non obstructive, and if the latter whether latent hæmorrhagic or purulent prognosis can best be considered under these headings

OBSTRUCTIVE BRONCHIECTASIS

The obstruction may be within or without the bronchi If from within, it may be caused by a foreign body, an innocent tumour a malignant tumour, or stricture In my experience, if the foreign body has remained long enough to cause bronchiectasis its removal will not cure the dilatation or necessarily the symptoms, though they may be greatly improved The same applies to innocent tumours The prognosis of stricture is poor, even with intubation

Pressure from without may be caused by glands malignant or otherwise, or by an aneurysm In any case, the prognosis is extremely grave for as a rule the primary cause is incurable Relief may be given if the pressure is relieved by X ray therapy in malignant disease, or by X ray therapy combined with arsenic in lymphadenoma

NON OBSTRUCTIVE BRONCHIECTASIS

The condition of latent bronchiectasis has only comparatively recently been clearly recognised and understood Its presence may be revealed only during an attack of influenza or some other infection by the expectoration of great quantities of purulent matter One attack alone may put the condition into the category of purulent bronchiectasis On the other hand, the trouble may subside completely and the patient may become perfectly well again Only by observation over a period perhaps of years can the chances of this be determined With careful treatment, climatic and otherwise these patients may remain in health and free from symptoms for very many years, or they may get recurrent attacks of fever and spitting of pus with almost every cold or infection that comes their way The condition is bound to restrict their activities and possibly force a change of residence to an ideal climate if this can be managed What this ideal climate is may not be easy to decide, and still less easy to follow, but the high alps, parts of Africa, the South Pacific slopes would fulfil many of the criteria

HÆMORRHAGIC BRONCHIECTASIS

This condition may cause profuse hæmorrhage from childhood up to the age of 60 and possibly longer The condition is, therefore, compatible with life, but the recurrent hæmorrhages are terrifying to the patient, and of course, if frequent tend greatly to undermine his health It may develop into the third category of purulent bronchiectasis Lipiodol and bronchoscopic investigation is very important because the condition may be closely simulated by lung stone or papillomatous growth, which when removed may leave no legacy of symptoms

PURULENT BRONCHIECTASIS

Purulent bronchiectasis may present every gradation from the mere morning spitting of a little purulent phlegm to a condition so horrible as to make the patient's life intolerable to him and to everyone around him It does not follow that the one will lead to the other, although there is always this possibility In some cases there is a rapid downward progress, in others a slight or even fairly well-established state may remain stationary for years In the former group I recall a medical student who after a post operative pneumonia at once developed bronchiectasis Within a year he had died of a cerebral abscess Again, a professor at one of the universities, after a septic throat, developed in rapid succession broncho pneumonia suppurative pneumonitis, and bronchiectasis with gross clubbing of the fingers and offensive expectoration and he died within two years with fever and general toxæmia

The moment the sputum becomes offensive the prognosis is bad The amount of pus also appears to be a factor Temperature, tachycardia (a toxæmic manifestation) loss of weight, are all ill omens There is always a possibility of cerebral abscess though this in my experience is not very common But the danger of broncho pneumonia is ever present, and also a tendency to progressive myocardial degeneration

This then, on broad and rather vague lines gives a picture of the possibilities in bronchiectasis I have several patients whom I have been watching for years, with physical signs in the lungs with a certain amount of purulent expectoration in the morning in whom lipiodol has shown considerable bronchiectasis to exist, but who have carried on their work without interruption

Influence of Treatment on Prognosis

This is a question which cannot be answered until we have had longer experience of the results of modern methods There is no doubt that the older forms of medical treatment—e.g., posture, creosote and general hygiene—prolongs the patient's life Artificial pneumothorax if successful in a suitable case will completely stop all symptoms but there are great difficulties in maintaining a life long pneumothorax Nevertheless I have several cases treated by pneumothorax or oleothorax where symptoms [illegible] have been kept completely in check for several years [illegible] the disappearance of all symptoms The only radical treatment, however, is lobectomy This, *in suitable cases*, should be curative The technique of this operation is advancing with rapid strides, and already many successful cases have been reported, but we have still to learn the ultimate fate of patients so treated. The suitable case is ideally a strictly localised unilobar bronchiectasis, in which the dilatations do not exist too close to the root of the lung. Nevertheless, it is not impossible to remove more than one lobe, and I am convinced that bilateral, unilobar bronchiectasis will before long yield to the skill of the thoracic surgeon Mr. Tudor Edwards has kindly supplied me with the following figures. Of 54 cases of lobectomy performed by him, 33 are healed and symptomless while 8 have died Mr. J. E H Roberts and Mr H. P. Nelson have also kindly sent me their results of 32 lobectomies, 14 are well and completely relieved of their symptoms, 8 are improved, 6 died The other patients in both series were not improved largely owing to bronchiectasis in some other part of the lung.

F G CHANDLER, M D., F.R C P.,
Physician, City of London Hospital for Diseases of the Chest

POST-GRADUATE LECTURES

OF the post-graduate courses recently held for old students of London teaching hospitals one was at University College Hospital, and we publish this week summaries of lectures delivered there by Dr Charles Bolton and Dr Blake Pritchard The address by Mr Leslie Williams was given in the course held at St Mary's

HÆMATEMESIS

(DR CHARLES BOLTON)

HÆMATEMESIS may occur at any time, in any place, and to any amount The diagnosis of hæmorrhage is commonly obvious from the blanched face and almost pulseless condition of the patient, together with the evidence of the vomited blood On the other hand, he may walk into your consulting-room complaining only of shortness of breath and faintness; the pallor of his face however suggests an examination of his fæces as soon as possible for melæna Again, you may be shown some stained material the patient has vomited, which can only be recognised as blood by tests; these can be made quite easily by any medical man. If acid in reaction the patient has without doubt vomited the material If alkaline and consisting chiefly of saliva and mucus, with red blood intermingled, it has most likely come from the mouth or pharynx, and may be due to self-inflicted injury. It is well to remember that regurgitation from the œsophagus is commonly described as vomiting. Coughing and vomiting may occur together, but hæmoptysis initially is red and frothy, and is commonly followed by rusty sputum and melæna does not result Again, epistaxis may lead to the swallowing of blood which may be vomited. This is a not uncommon cause of hæmatemesis in children.

Having decided as to the gastric origin of the blood, a few very general rules, to which there are numerous exceptions, as regards the character of the blood may aid the diagnosis of the cause of the bleeding Coffee-grounds vomit indicates that the bleeding is moderate in degree and has been poured out slowly, so that time has been allowed for the formation of acid hæmatin by the HCl Such bleeding occurs from the surface of an ulcer or cancer, or in mechanical congestion as hepatic cirrhosis In acute toxic gastritis the blood is commonly red, small in amount, and mixed with mucus Dark-coloured clots point to a more profuse bleeding and are significant of chronic ulcer, cancer, and cirrhosis Large amounts of bright red blood typically result from an acute ulcer, an œsophageal vein in cirrhosis of the liver, splenic anæmia, less commonly chronic ulcer, and rarely cancer. In toxic vomiting, and in fevers and purpuric conditions, the blood is of the coffee-grounds variety, but occasionally more profuse, especially in purpura

Three classes of cases occur as regards the relation of the blood to the act of vomiting. The hæmorrhage may be the immediate cause of the vomiting and without warning or preceding gastric symptoms blood is suddenly vomited; as typically seen, for example, in acute gastric ulcer, but rarely in chronic ulcer. In cirrhosis of the liver sometimes and in the purpuras the same event may occur Secondly, hæmatemesis occurs during the course of a disease of which vomiting is a symptom—notably in chronic gastric ulcer, cancer, cases of cirrhosis of the liver in which gastric symptoms are present, and acute gastritis Finally the hæmorrhage occurs at the end of an attack of prolonged vomiting, having been caused by it, and is small in amount, as in sea-sickness. It is well to remember that a gastric ulcer patient may die from profuse hæmorrhage without any blood having been vomited at all

The presence of pain and other gastric symptoms are next ascertained and definitely point to organic disease of the stomach or duodenum; but the absence of pain is characteristic of acute gastric ulcer. The physical examination of the patient, when opportunity presents itself, is particularly directed towards the position of pain, tenderness, or rigidity, and the presence of a tumour or dilated stomach; also enlargement of the liver and spleen as indicating portal obstruction or splenic anæmia. Finally wasting, jaundice, and the presence or absence of general disease associated with hæmorrhage are ascertained. It is important to inquire into the nature of any previous attacks of hæmatemesis and the intervals between them. Bleeding at intervals without any gastric symptoms between is characteristic of acute ulcer, but symptoms are nearly always present in chronic ulcer.

Treatment—I shall discuss the treatment of hæmorrhage in peptic ulcer as being the commonest and most important example of hæmatemesis In this disease hæmorrhage may occur at the formation of the initial lesion, or at any stage during the evolution or cicatrisation of the ulcer. It is therefore of importance to form as accurate an estimate as possible of the condition of the ulcer by a consideration of the facts of the case as I have described above a very difficult task In the vast majority of cases the bleeding is arterial, but the artery is unable to retract and so assist in the arrest of the hæmorrhage owing to the nature of the rupture and the peculiar conditions in which the vessel is placed The arrest of bleeding is therefore entirely dependent upon the formation of a firm clot, which is always formed, but which usually becomes partially or completely detached leading to recurrences of bleeding, sometimes as profuse but commonly smaller than the initial hæmorrhage. The patient practically never dies from the initial hæmorrhage, but from these recurrences, and the necessary repeated dilution of the blood leads to the formation of less firm clots. The factors tending to dislodge the clot are the movement of the stomach, stretching of its wall, digestion of the clot and the contact of food with it, and vasodilatation of its arteries, in other words the processes of digestion. These inimical conditions are avoided by withholding food and keeping the stomach in the resting phase till the clot is sufficiently consolidated to withstand them. It is quite true that the patient may recover whilst eating his normal diet, and in the celebrated Lenhartz treatment, in which feeding by the mouth was commenced at once in spite of bleeding, it was claimed that the mortality was no greater than that of the starvation method. The conditions, however, are so complicated and various that statistical results are of little value.

The patient should be given a hypodermic injection of morphia and atropine at once and left alone for a few hours. He is then to be kept absolutely at rest in the supine position on a firm bed with light clothing, the room should be cool and well ventilated and the blinds partially drawn. It may be advisable to raise the foot of the bed, and a cradle relieves the pressure of the bed-clothes. The mouth is to be systematically cleansed with some antiseptic solution. Small amounts of water are given occasionally by mouth and do something to relieve thirst. In the great majority of cases both pain and vomiting are absent. Half a pint of glucose saline solution is administered every four hours per rectum, but if this is not well retained it may be given six hourly, and also subcutaneously if thirst is acute. The drip method may be employed if preferred.

This treatment is continued till the bleeding has been arrested for two days. Bleeding attacks are recognised by faintness, rapidity of the pulse and the appearance of fresh melæna in the daily wash out. Melæna is the last sign of bleeding, but black fæcal masses may be washed out even two or three weeks after the bleeding has stopped. At the commencement of mouth feeding it is best to begin with albumin-water or whey in small quantities, gradually increased to 5 oz. two hourly. Equal parts of whey and citrated milk are then substituted as a stage towards 5 oz. of citrated milk every two hours and finally 7 oz. three hourly. This latter stage is reached in about ten days after the bleeding has stopped and the diet for the treatment of the ulcer is now proceeded with. The rectal salines are reduced in number and finally omitted when the stage of milk diet is reached. Enemata every other day are now employed instead of wash-outs. Vomiting is commonly not repeated unless the stomach is irritable or fairly large recurrences of bleeding occur. The stomach usually empties normally, but sometimes fails to do so.

Lavage.—It is over twenty years since washing out of the stomach with iced water was first suggested in such a condition. The blood is sucked out with an evacuator and the water introduced in small quantities and removed. I do not recommend this procedure, for in order to empty the stomach the tube must be introduced into the lowest point of the organ and not only may it come into contact with the ulcer, but the mucous membrane is subjected to suction and the clot projecting into the stomach is very likely to be dislodged.

Hypersecretion if present or gastric juice excited by the blood is best controlled by atropine gr. 1/100–1/50 or tinct. belladonn. ♏ 20–30 by rectum. This drug not only arrests secretion but also dilates the pylorus. Small amounts of lime water by mouth are also useful.

Blood transfusion.—Transfusion has been much used within recent years and undoubtedly is a valuable method, but requires caution in its use. It is not to be used after the initial hæmorrhage, but after one or more recurrences as decided by the physician. Too much stress must not be laid upon the fear of recurrence of hæmorrhage owing to raised blood pressure. I believe that there is little danger in giving two transfusions of 250 c.cm. each with an interval of two hours between. It is impossible to make definite statements about transfusion or lay down rules for its employment, because it is difficult to say accurately in which cases it has saved life. One sees now and then a case in an almost desperate state recover without transfusion, and it may fail to save the patient in an apparently less serious condition.

Many statements have been made regarding this treatment, but it must be acknowledged that there is no definite pathognomonic sign for its use. I believe the correct attitude to adopt is to review the case in all its aspects and come to a decision from the general clinical picture. We can thus form an idea as to the severity of the case and of the stress which has been necessary to reduce the patient to his present condition, and how he had resisted it. In the examination of the patient the two most important observations to rely upon are the condition of the pulse as regards rate and other characters, and, secondly, the percentage of hæmoglobin. It must be remembered that a patient with a hæmoglobin reading of 30–40 may appear to be quite comfortable, although such a low reading is dangerous, and also that the rate of the pulse is accelerated by fever, which is commonly present. Estimations of blood pressure are of uncertain value, for we do not know the normal reading of the patient. Patients may recover with quite a low blood pressure, and after transfusion the blood pressure may fall and the patient still recover. Apart from the severity of the case the persistence of bleeding is another indication for transfusion.

Hæmostatics.—Hæmostatic substances which precipitate the blood plasma, as perchloride of iron, are of little use, because the clot formed by them is loose. There is no positive evidence that hæmoplastin is of any value.

Operation, if decided upon, should be accompanied by transfusion. Acute ulcers, if the history points to them, are better left alone. If operated on the stomach must be opened and the surgeon take his chance of finding the bleeding point, and even then there is no clear certainty of recovery. A chronic ulcer can be easily found, and the indications for directly dealing with it are recurring and persistent hæmorrhage or pyloric stenosis.

EFFECT OF INJURIES ON THE DEVELOPMENT OF DISEASES OF THE NERVOUS SYSTEM

(DR. BLAKE PRITCHARD)

It is a matter of common experience [illegible] patients suffering from such diseases as sclerosis, progressive muscular atrophy, agitans, an account of [illegible] shortly preceding the onset [illegible] obtained. A reason for this is [illegible] puzzled to find [illegible] admit no reasonable doubt as to the nature of their illness, we nevertheless confess our complete ignorance as to its cause Another reason is that minor injuries are so common to all of us and so frequently repeated that most patients can usually remember some such injury which the later development of symptoms makes significant.

The general tendency is to discount the effects of any injury as being unlikely to make any contribution to the onset or to the progress of these and similar diseases, and to regard the injury itself as being probably due to some otherwise unnoticed clumsiness or weakness—symptoms of the disease already present I want therefore to draw your attention to a few cases in which a recent injury would appear either to have precipitated or to have increased the severity of one of these generalised diseases, and also to point out the lines along which an explanation of these effects can possibly be found.

These cases differ in no essential way from those which have been already described by Dr Wilfred Harris in his Savill oration for 1933 (The essential details of six such cases, two of disseminated sclerosis, one of progressive muscular atrophy, one of paralysis agitans, and two of hepato-lenticular degeneration were then given In each of them the clinical picture was unusual, in respect either of abnormal rapidity of development or of abnormally severe disability in that limb which had previously been injured.) If we are not satisfied with the view that in not all of such cases is the relation between the injury and the unusual features of the subsequent disease a chance coincidence, we are naturally led to look for other similar observations which may throw some light upon the way in which injuries to other parts of the body may be expected to influence the resistance of the central nervous system to the causative agencies of these diseases

In respect of the peripheral nerves it can be demonstrated without doubt that peripheral neurons in which conduction is already slightly impaired, as a result of lead and alcohol poisoning, are less resistant to mechanical injury, in that continued pressure over a nerve trunk containing such neurons leads to paralysis and to sensory loss in their area of distribution much earlier than it does in otherwise healthy persons We have a priori no reason for assuming that this would be so, since we have none for assuming that the effects of mechanical pressure and of such forms of poisoning would necessarily summate in impairing conduction through the peripheral nerve-fibre. That they do summate in this way can easily be demonstrated

If damage or destruction of the tissues of a limb is going to produce any change in the cells of the central nervous system, it is in that part of the spinal cord to and from which the nerves of the limb run that we can most reasonably expect to find such changes They might conceivably result from transmission to the spinal cord of some products of inflammation or of tissue breakdown Alternatively, since destruction of peripheral neurons is known to give rise to histologically demonstrable changes in their cells of origin—in this case the spinal root ganglia or the anterior horn cells of the cord—it is possible that the changes underlying these histological appearances may entail a lowering of the resistance of these cells to other pathological influences that are already at work

Whatever may be the mechanism by means of which such a change takes place, we must ask whether there is any evidence that damage of one limb can and does lower the resistance of immediately related segments of the spinal cord to attack by other disease processes A clear answer to this question is, I believe, given by certain cases of acute anterior poliomyelitis

In the first, fracture at the lower end of the radius of the right arm was followed two weeks later by complete paralysis of all the muscles in the forearm and slight weakness only of the triceps and deltoid *muscles on both sides Later all symptoms* disappeared except for complete and permanent paralysis of the muscles of the forearm

In the second case, severe bruising of the left thigh with pain but no weakness, caused by falling astride a fence, was followed within 48 hours by complete paralysis of the left leg with the exception of some feeble flexor movements of the toes, slight weakness of the right extensors of the knee, and very slight weakness of both triceps muscles in the arm Two months later all paralysis had cleared up with the exception of that in the left leg, which was still completely paralysed except for slight flexion of the toes

In the third case excessive fatigue of one particular muscle in the arm, the radial extensor of the wrist, which is *rarely paralysed in infantile paralysis*, was followed within 36 hours by paralysis of this muscle, paralysis of the right deltoid, weakness of the right triceps, and weakness of the right gastrocnemius muscle Later the gastrocnemius recovered completely, the triceps recovered almost completely, the deltoid remained considerably weakened, but the only muscle which remained completely paralysed and which finally wasted completely was that which had been fatigued to excess in the above way

These three and two other similar but less striking cases have come under my observation in the past two years The existence of four similar cases was referred to by Abercrombie They appear to me to prove conclusively that accidental injury of one limb can impair the resistance of immediately connected segments of the spinal cord to attack by the virus of infantile paralysis That it should impair also their resistance to the pathological changes of progressive muscular atrophy does not necessarily follow, and that the resistance of parts of the central nervous system less directly related to the site of damage can be altered as a result of such accidental injuries is suggested still less

However, I believe that we can no longer with reason maintain that there is no evidence that injuries to a limb can influence in any way the development of *diseases confined to the central nervous system*, and must allow that when an injury does precede the development of one or another of these conditions, its possible contribution to the course of the disease cannot be summarily denied.

MATERNAL INJURIES OF CHILDBIRTH

(Mr Leslie Williams)

Maternal injuries during pregnancy and childbirth may be classified as mild or serious The mild include injuries to the abdominal and other muscles, injuries to the supports of the breasts, and dental caries

So far as the abdominal muscles are concerned, I believe that binders do no good, though they serve a useful purpose in preventing the uterus filling with blood and rising during the first 24 hours after delivery Instead, the tone of these muscles should be restored by exercises such as sitting up and down at frequent intervals from the very first day Massage to the limbs may be started on the sixth day, and to the abdomen on the eighth. I feel satisfied that movements and massage do not increase the liability to pulmonary embolus.

he breasts should never be pressed downwards—s often done by the nurse—with a binder round chest Rather should they be supported by a sière during pregnancy and by a similar one of next larger size as soon as lactation commences

ental caries may to some extent be limited by ng throughout pregnancy and lactation some paration of calcium, but, should it appear, ediate treatment should be undertaken Apart n wholesale extraction there is no fear of dental tment causing miscarriage

mong the serious injuries I include the various rations It should be remembered that severe nal lacerations may occur while the perineum ains unruptured, and hence are in danger of aining unrecognised Their repair must not be formed in any careless manner, it is useless for mple to attempt to repair a complete tear into rectum unless the circumstances are favourable the operation requires a good light the lithotomy tion, an assistant and an anæsthetist

acerations of the cervix, though they sometimes ur in spontaneous natural labour are, I believe lly due to the premature application of forceps s amazing to note how often full dilatation of the ix is diagnosed when really this state of affairs ut only half reached Over and over again cases sent in to maternity hospitals as "obstructed our," "failed forceps" &c, and on investigation s found that the cervix is perhaps one half or third dilated In such cases treatment by atives results in the fullness of time in spontaneous very Such a failure to realise the absence of full tation of the cervix is due to the examination g conducted too rapidly and in too cursory a nner In the intervals between pains the soft rix may often be pushed aside by the examining er and so give the impression of complete dilata n If, however, a pain is awaited, the margin of os will become tense and the real state of the ning can be appreciated If this were regularly o there would be many fewer cases of forceps lication through or outside the undilated cervix, many fewer cases of cervical laceration

Vhen the forceps are applied inside an incompletely ted cervix, and when traction is applied the rix, the upper part of the vaginal wall and the jacent bladder are dragged down and it is probable t some dislocation of the structures surrounding internal urethral orifice takes place I believe that s in this way that that most distressing symptom ress incontinence is brought about It is also sumably caused after proper application of forceps he operator neglects to make sure that the bladder not being pulled down At the time such maternal uries are apt to be overlooked, but the patient's comfort subsequently is a very serious matter ve tried various operations to relieve these symp ns, for it must be realised that anterior colporrhaphy s not succeed in more than about half the cases some cases passing a catheter exposing the thra through the anterior vaginal wall and tying unabsorbable suture outside the urethra in the ion of sphincter may succeed

Perhaps the injury with the most distressing results the mother is vesico-vaginal fistula This is netimes due to prolonged pressure on the bladder s, nipped between a large fœtal head and the ck of the symphysis But undoubtedly it sometimes ults from forceps application without catheterisa n of the patient immediately beforehand I always ch students that when they go into practice and a pair of obstetric forceps they should at the same time buy a catheter and tie it to the forceps In this way this most essential precaution of catheterisation is not apt to be omitted

Finally retroversion may be mentioned, though it must be stressed that only a small proportion of retroversions need such drastic treatment as ventro suspension The woman who had a congenital retroversion prior to her pregnancy is almost certain to develop retroversion again in the puerperium, but not only such patients, but all puerperal women, must be examined on the tenth day and the retroversion, if found corrected A pessary should then be fitted and this can be done at as early a date as this without any danger All puerperal cases should again be examined six weeks after labour It is often found then that the uterus previously anteverted has become retroverted Its position can still be easily corrected and the organ remains soft enough to permit itself to be moulded into a good shape, as well as manipulated into a good position A pessary is again fitted, and in this case as in the one previously mentioned it is changed three months later, and removed six months later

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg Lt J W L Crosfill promoted to rank of Surg Lt Comdr

Surg Lts (D) R W Stevens to *Ganges* and F A Pearce to *Victory* for R N B

ROYAL NAVAL VOLUNTEER RESERVE

Surg Lts R M Buchanan and A R Thomas promoted to Surg Lt Comdrs

Proby Surg Lt W F Jones to be Surg Lt

ARMY MEDICAL SERVICES

Col J D Richmond *D S O, O B E*, late R A M C, having attained the age for retirement is placed on ret pay

The undermentioned Lt Col to be Col H L Howell, O B E, M C, from R A M C

ROYAL ARMY MEDICAL CORPS

Maj R G Shaw, M C, to be Lt -Col

Short Serv Commn—F J O'Dowd to be Lt

ARMY DENTAL CORPS

Lt (on prob) R H Green is confirmed in his rank

TERRITORIAL ARMY

Capt A M Cooke to be Maj

Lts T F Briggs and J G Lawson to be Capts

TERRITORIAL ARMY RESERVE OF OFFICERS

Maj F Hauxwell having attained the age limit retires and retains his rank, with permission to wear the prescribed uniform

ROYAL AIR FORCE

Flight Lt A Harvey is promoted to the rank of Squadron Leader

Group Capt A E Panter to R A F General Hospital Hinaidi Iraq, for duty as commanding officer

Squadron Leader A Bruce to R A F General Hospital Hinaidi Iraq for duty as medical officer

Flight Lts J F McGovern to R A F General Hospital Hinaidi Iraq, C G J Nicholls to R A F Hospital Aden

Flying Offs H S Barber to Aircraft Park India Lahore, A D A Blackburn to No 28 (Army Co-operation) Squadron Ambala India

AUXILIARY AIR FORCE

No. 601 (County of London) (Fighter) Squadron—J H Williams is granted a commission as Flying Officer

INDIAN MEDICAL SERVICE

Capt C S [illegible] to be Maj

Lt (on prob) J J [illegible] to be Capt (on prob)

Capts S D Dalal and A [illegible] relinquish their temp commns

PANEL AND CONTRACT PRACTICE

ANNUAL PANEL CONFERENCE

REPRESENTATIVES of local medical and panel committees held their annual conference on Oct. 18th in the Great Hall of B M A House, with Dr. H. C. JONAS (Barnstaple) in the chair

Dr H G DAIN (Birmingham), chairman of the Insurance Acts Committee (I A C), moving the adoption of the annual report of the committee, reviewed the events of the past year. He remarked that, owing to the efforts of the committee during the last ten years in steadily dealing with criticisms of the medical service, the machine was running much more smoothly and giving greater satisfaction No large measure of policy had been considered during the past year, and no action had been taken with regard to the capitation fee, nor would be until the second half of the cuts was restored The I A C had been anxiously concerned with the invasion of National Health Insurance and other medical practice by lay bodies who bought and sold practices on a commercial basis regardless of the doctors and their patients It was seeking to make this traffic less profitable and more difficult, but the implications made the situation delicate and no definite suggestion was before the committee It hoped for a solution by putting approved bodies in touch with one another so that the impecunious young doctor might be able to buy a practice on terms suitable to him. The I A C, the Medical Insurance Agency, and the British Medical Bureau were considering a scheme by which such purchases could be financed

The largest single piece of work had, continued Dr Dain, been to get together the representatives of the various types of approved societies and to discuss current problems with them. Many useful suggestions had been roughed out at these conferences and would improve the harmony of the scheme. When the I A C next put up a case to arbitration for an increase in the capitation fee, it would be able to point to such improvements in the service and to claim that the insurance practitioners had done their utmost to make the service satisfactory He believed that the arbitrators and the public would find it more satisfactory than it had been ten years before.

Pregnancy and Sickness Benefit

The various items on the report were then debated According to the report, the practice of approved societies concerning the relationship of certification of pregnancy to sickness benefit differs widely Discussions have been held with representatives of approved societies in order to agree on the validity of a certificate issued to an insured pregnant woman as evidence of her need for sickness benefit. The Ministry of Health maintain that pregnancy without incapacity for work is not sufficient Some societies adhere rigidly to this view; some allow sickness benefit towards the end of pregnancy, and others refer all such cases to the regional medical officer (R M O) The opinions of insurance practitioners vary concerning the advisability of normal pregnant women continuing at work at various parts of the term, and this difference results in varying standards of certification Other confusing factors are the attitude of employers and the advice given at antenatal clinics. Dr DAIN therefore moved, on behalf of the I.A C, the following criteria, called "Recommendation A."

(*a*) That a medical certificate shall be held to be inadequate if it certifies the incapacity for work of the insured person on the ground of "pregnancy" alone,

(*b*) That a medical certificate shall be held to be inadequate if it certifies the incapacity for work of the insured person on the grounds of "pregnancy" even with an indication of the period of pregnancy;

(*c*) *That a medical certificate shall* be held to be adequate if it certifies the incapacity for work of the insured on the grounds of "pregnancy" plus an indication of the period of pregnancy and plus an indication of the nature of the employment such as would in fact preclude the person from continuing longer at that work,

(*d*) That a medical certificate shall be held to be adequate if it certifies the incapacity for work of the insured person on the grounds of pregnancy and some disabling associated condition

In answer to questions, Dr Dain said that the definition of inadequacy was that the society would not pay benefit on the certificate but might ask the doctor to state an additional cause or refer the patient to the R M O. Such a certificate was still a legal document and the doctor could not be compelled to write any more, though he might be asked to do in the interests of both parties

Dr. W. HAMILTON (Midlothian) moved the following paragraph in substitution for paragraph (*b*) —

(*b*) That a medical certificate shall be held to be adequate if it certifies the incapacity for work of the insured person on the completion of the eighth month of pregnancy

He maintained that a woman in the ninth month of an uncomplicated pregnancy was unfit for remunerative employment

Dr R L E DOWNER (Salop) objected that pregnancy was not a disease, any more than was love post-prandial repletion; the certification of [illegible] was not only inadequate but obviously wrong and almost immoral Local club secretaries were in the habit of sending him women five months pregnant for certification, saying that the patient would be entitled to payment for six weeks This was obviously done for propaganda purposes.

Dr F. K KERR (I A.C) advocated a change in the Act to stabilise the maternity benefit in favour of women before confinement as well as after.

Dr DAIN agreed that this was one of the difficult questions of medical certification. The approved societies had been astounded to discover that one-half of the women entitled to sick pay for pregnancy claimed at eight months If the Midlothian amendment were carried it would mean the compulsory payment of benefit for the last month to many women who did not now claim benefit, and as a result there would have to be a reassessment of the funds Any information the practitioner could give on the certificate made matters easier for the patient and the society alike The recommendation of the I A C was not intended to have the force of a regulation doctors would still be competent to certify pregnancy only What it would affect was the reception of the certificate by the society It would always be open to the doctor to certify "pregnancy eight months, factory work" Such a certificate would be adequate and practically always save the risk of being sent to the R M O Women who claimed benefit at the end of the eighth month or after were generally given it by their approved society

The Midlothian amendment was lost by a large majority and Recommendation A was adopted

Dr A BEAUCHAMP (Birmingham) moved —

That where an insured woman is certified incapable of work by reason of "pregnancy eighth month," and pproved society requires the opinion of the regional medical icer, the arrangements should always provide that the oman is examined in her own home

reference to the R M O of a woman advanced in egnancy was, he said, a considerable hardship nnecessary references would be cut down and women ould be saved from having to go a distance and sit a mixed crowd where they might be exposed to fection He explained, in answer to questions, that eighth month" meant the thirty sixth week The airman reminded him that the R M O could xamine a patient in her own home if the doctor rtified that she was unfit to travel

Dr T MacCarthy (I A C) confirmed the aspect of ardship to a woman in the ninth month of travelling n buses and trams and possibly of changing He ointed out that attendance on an emergency confine ent was not the ordinary function of a bus conductor, nd that not every R M O was capable of attending complicated one Many women strongly objected being "messed about" in a strange place

Other speakers suggested that the threat of reference the R M O deterred many women from claiming enefit

Dr Dain said that he was entirely in favour of rotecting women from the indecent procedure of sking them to sit and wait among other people hen they had completed eight months of pregnancy n his advice the wording of the proposed certificate as altered to "Pregnancy after completion of eight onths," and the conference passed the motion in hat form

Certification

The conference passed by a large majority a motion y the I A C that it would be in the interests of all oncerned if practitioners could make greater use of he space already provided on the certificate "You hould come to see me again on day next," specially in cases where the practitioner considered he patient's incapacity was drawing to a close he approved societies, said Dr Dain, attached great mportance to this suggestion They were anxious to ave the large aggregate of odd days which patients night "scrounge" by putting off the giving of the inal certificate This sentence enabled a doctor to revent the patient from securing the undeserved xtra day

Insurance practitioners are not required to decide hether an incapacitating disease is occupational r Dain however thought that they might be equested to make on a first certificate the comment "? occupational" when they considered that possibly he character of the patient's employment might ontribute to or cause his condition The approved ociety would then take the necessary steps the atient would be sent to the factory doctor and, in ccordance with custom, the society would find the ive shillings for examination This proposal had he aid, been one of the most valuable results of the onferences with the approved society representatives

Dr Alexander Forbes (Sheffield) strongly isagreed with the proposal holding that it was angerous to certify a condition as occupational even ith a query In his part of the country, he said, the patient was left to pay the five shillings

The conference however agreed with Dr Dain that the proposal of the I A C represented an easy and convenient method of getting the question decided by the proper person

References to R M O 's

Dr Dain then moved an innovation in procedure over which he warned the conference that it might feel considerable qualms The I A C, he explained suggested that where a society felt that examination by the R M O was desirable, it might issue to the practitioner a letter the form of which was embodied in the resolution, asking him whether a final certificate had been issued by him or was likely to be issued by him in the course of the next few days Annexed to the letter would be the following form for his reply —

Dr

I issued a final certificate on

Do you consider that any advantage would be gained by a reference to the R M O ?

Any other observations which you may wish to offer the society

Signature

The conference he said was invited to advise doctors to supply the desired information Some societies were already asking for the information in certain cases In favour of the form he urged that it only required a plain "yes" or "no", that it would save references to the R M O and ensure that only those cases were sent which the practitioner agreed should go and not those whom anybody could see to be quite incapable of work He accepted an amendment by London providing that the envelope enclosed for the reply should be stamped

Dr R G Chase (London) said that London only agreed provided that sufficient professional safeguards were granted He objected that the procedure was behind the patient's back When a patient was referred to the R M O he received a notice, but in the proposed procedure the doctor would write back without his consent and the conference should be very careful that practitioners were safeguarded on the legal side

Dr J O Summerhayes (East Sussex), moving an amendment to delete the "any other observations" line, suggested that young doctors might get into difficulties and give away professional secrets, but the conference did not share his apprehension

The amendment of East Sussex was rejected but Dr S A Winstanley (I A C and Lancs) moved that doctors should in no case supply the desired information until after the issue of at least two intermittent certificates He feared that, if this modification were not made practitioners would be caused more irritation and trouble than by intensive references

Dr Dain replied that the form would only be used when the sick visitor reported something doubtful about the patient's incapacity Two societies would not adopt the letter for fear of losing the advantages in speed which they had gained by their special procedure

The Lancashire amendment was therefore also lost.

Mr F H Wallace (Rutland) feared legal difficulties and was for rejecting the form until counsel's opinion had been taken, and Dr G F [illegible] (Dundee) gloomily foresaw more work and not less to the practitioner, who would, he thought soon be bombarded by societies with requests for opinions which had already been given in ordinary certificates Dr J [illegible] (Manchester) suggested that no extra work should be taken on until the cut was restored, but it was pointed out to him that no practitioner was obliged to supply the information Dr H G C [illegible] (Huntingdonshire) pointed out that the procedure was easier than the form of reference which would be the alternative He

G. H. **Sedgwick** (Yorks, West Riding) remarked that an opinion that no advantage would be gained by reference would not necessarily dispose of the matter, for the case would always be one in which the society wanted a second opinion The extra work would not result in much fewer references

Dr **Dain**, in replying to these numerous suggestions and opinions, observed that none of the required answers gave away any information about the patient's condition or infringed professional secrecy at all There were, he said, a lot of patients about whom a lot of doctors had a lot of doubt To state that there might be an advantage in reference would satisfy the somewhat uneasy conscience which every doctor had with regard to certain cases, while saving him the unsatisfactory procedure of referring the patient to the R M.O himself

Its doubts appeased, the conference accepted the new procedure, with an additional line moved by Gateshead:

"I expect to issue a final certificate on   ."

Charging of Fees

Much controversy was excited over the perennial *question of the return of fees charged to patients* who have not disclosed that they are insured persons. Dr. **Dain**, on behalf of the I A C, moved an amended Clause 7 (3) of the Terms of Service :—

> If a person in applying for treatment does not represent himself to be an insured person, but subsequently within three months from the date of the presentation by the practitioner of an account or the payment to the practitioner of any fee or of the last of any fees paid where no account is rendered in respect of that treatment, requests the committee to secure the withdrawal of the account or the refund of the fee or fees, and the committee are satisfied that he was eligible to receive treatment from the practitioner as an insured person, the committee may, if they think fit, and if they are satisfied that the action of the doctor in presenting an account or charging a fee was due to a genuine misapprehension, require the practitioner to withdraw his account or recover from him by deduction from his remuneration or otherwise the fee or fees paid by the applicant, but in either event, if the applicant was not at the date of the treatment on *the practitioner's list*, the committee shall credit the practitioner with the remuneration to which he would have been entitled if the applicant had been attended by him as a temporary resident, and with payments calculated on the basis of the drug tariff, in respect of any drugs and appliances supplied to the applicant Subject to any deduction which may be made by way of inflicting a penalty under the committee's rules, the committee shall repay to the applicant the net amount of any fee or fees recovered, and of any payment made by him in respect of drugs or appliances obtained on the practitioner's prescription which he would, if he had received treatment as an insured person, have been entitled to obtain free of charge

He explained that the amended clause had first been put forward subject to one month being the period within which a claim by an insured person might be allowed, but the Ministry had insisted on the notice being increased to three months As the I A C had been very concerned to have the principle established, they had considered it worth while to concede the extension, while regarding three months as unnecessarily long

Dr. E K **Le Fleming** (I A C.) reminded the conference of the issue behind the clause The question on the interpretation of Clause 7 (3) had arisen at the time of the trouble in Dorset, and of the Ministerial inquiry into it One of the grievances of the Dorset practitioners had been that, in spite of an assurance which they had believed they had been given by the Ministry, they had been "crimed" for mistakes made on genuine misapprehension The inquiry had been very satisfactory and assurances had been received that the matter should be put right and that the clause should be amended Negotiations had been carried on ever since The difficulty on the side of the Ministry was that the old clause had clearly had in mind the possibility of genuine misapprehension, but if read carefully by an astute person anxious to evade the spirit of the regulations it *undoubtedly left an opening* for a man who had been guilty to ride off on the excuse *that the* patient had never said that he was on that man's list and that therefore the practitioner had not known it. This difficulty was overcome by the new form of words, but at the price of the extension to three months If the conference insisted on retaining the one-month period, the whole clause would be lost and the safeguard of the "genuine misapprehension" *would be jeopardised*

Dr **Winstanley** maintained that under the improved regulations between insurance committees, panel committees, and practitioners no practitioner ran any risk from committing a bona-fide error The present position was satisfactory and the extension to three months would still further increase the loss which practitioners suffered from these claims

Dr **Chase** said that this class of claims was increasing In ten years as a member of a medical service subcommittee he had never heard a case of a doctor charging a patient on his own list, which was the type of case always mentioned before the I A C A greater and more insidious evil was the surreptitious way in which patients delib · ' deceived insurance practitioners, going to some lengths in order to do it, with a view to being treated as private patients, a course which they found much more convenient The I A C. had now increased the time within which such patients could claim a refund of fee, and he could not understand why three months should be necessary

Dr R W **Taylor** (Oxon) said that the · ' men of that county had now convinced their insurance committee of the justice of their case and such claims were received with scant sympathy. The conversion had taken a little time but had been achieved E recommended other counties to do likewise

Dr **Dain** explained that the amended clause p forward by the I A C made it quite certain for the first time that the safeguard applied to patients w were not on the doctor's own list The I.A C d not want the interpretation of the clause to depend on goodwill but to be certain It desired all such cases to be dealt with by the medical benefit subcommittee *In exchange for this advantage it had to* submit t the extension.

The amended clause was carried by a large majority

THE TRIBUNAL

Dr **Chase** then moved that all claims submitted under this clause should be decided by the m dr service and not by the medical benefit subcommittee He maintained that the medical service subcommittee *did not exclusively try "crimes" and* was composed of an equal number of doctors and laymen, whereas the medical benefit subcommittee had scanty medical representation decided all the claims on the pa alone, and had been known to go astray In th country, he said, these decisions were often ma entirely by the clerk and not by the sub itself

Dr S P **Huggins** (Bucks) objected on the ground that doctors were *not proud to appear* before the medical service subcommittee, which commo tried graver charges, and that difficulty rarely occur with lay members in a just case

Sir **Henry Brackenbury** said that the difficu about the London motion was that circumstan ied in different parts of the country and it would be ng to pass a general resolution applying every- ere In most cases the situation was eased by the ency of the clerk and the members of the sub mittee The medical service subcommittee was up for the protection of the doctor In London re might well be a good many cases where the tor, for his own protection, would rather have conduct tried as a charge before the medical ice subcommittee than as a vague subject of ussion before another committee A doctor who ferred to take his case before the medical service committee should therefore have a right to do so Henry commended his suggestion to the I A C consideration, and the conference agreed to refer o that committee together with London s motion

Temporary Residents

The meeting approved a memorandum of the I A C the existing system of payment for temporary dents East Suffolk, represented by Dr H NRY, appreciated the memorandum but wished to pose that the temporary residents' fund should self supporting in each area, with a universal e for the kingdom Dr DAIN said that the present ure of 8s was not a permanent one but fixed yearly the appropriate committee, of which he was a mber The *number of attendances to temporary* dents had, in course of time, become less varied l the figure selected had seemed to fit the country folk wished to make it compulsory on all areas give the same amount, but the money belonged the local committees, which might well be allowed onomy in distribution The motion was lost and ilar motions by Notts and Lincs (Lindsey) re, by leave withdrawn

"Own Arrangements"

A second memorandum was also approved with expression of thanks to the office for putting together Dr J W E CORY, however proposed West Suffolk —

> hat it be made a condition of approval of a collective lication by the insured members of the staff of a hospital be allowed to make their 'own arrangements' for iving medical attendance and treatment from the titution that any such insured member shall be entitled a refund from the institution of the cost of treatment l drugs and appliances obtained whilst temporarily ent from the institution

e instanced the case of the nurse who came for vices on holiday from an institution which had no id to meet charges Dr DAIN cordially agreed with proposal which, he said, was in force in his area proval of new institutions should be conditional a willingness to pay The committee had had no vious instance of failure to pay Dr M W RENTON d that this situation amounted to a pest in the nt area New members of institution staffs had ir cards taken from them and a strange name itten on—not always a member of the hospital ff, the local doctor was then asked to treat the s as a temporary resident He strongly supported e resolution which was carried

Dr W J LOGIE said that Falkirk wished to olish the whole system Doctors who took a few nel patients only might well give up the panel or make it a larger part of their work Trouble ould be saved if people in institutions were treated a special non panel class Falkirk s motion was t but the meeting carried a motion proposed Dr HENRY (East Suffolk) that insured members of affs should be dealt with by the 'closed panel ethod, and own arrangements' be forbidden He knew, he said, of cases where payment had been refused The closed panel enabled these people to be treated as temporary residents when away from the institution

Deputising

Dr A K GIBSON proposed for London—

> That this conference is of opinion that the appointment of regular deputies to medical members of insurance committees would be in the best interests of the service and instructs the I A C to press for the appointment of such deputies

The principle, he said, was not in dispute Many practitioners found it difficult to leave their work in order to attend committees whereas non medical members found it easy, the result being an imbalance in the committees. Each doctor ought to have one deputy This had the additional advantage of giving experience to non members who might later become members Dr DAIN pointed out that the proposal would require legislation and the effect of that would be to empower all members, lay and medical alike, to appoint deputies He did not consider that desirable Dr GIBSON disclaimed any wish to make it easy for anyone not to attend, but lost his motion by a large majority

Medical Records

Dr DAIN proposed that there be only one method of record keeping by insurance practitioners and that the existing method be retained He said that after an inquiry into the records, and discussion on the obligation to record visits and attendances, the committee had decided that the advantages outweighed the disadvantages If the doctor had to make a tick he would have the card handy for the clinical note which was so desirable Pursuant to the desire to improve and properly evaluate the clinical note Dr Dain also moved, and carried without discussion—

> That while the existing method is continued the Ministry's assessment as to the value of a practitioner s records should have a bias in favour of the clinical notes as opposed to the minuting of attendances and visits
>
> That machinery similar to that already provided by the Medical Benefit Amendment Regulations, 1930, in the matter of certification should be set up to enable the Minister to make use of the panel committee in taking action against a practitioner who, after warning, does not improve the standard of his clinical medical records

Scotland

Dr HAMILTON (Midlothian) Dr KERR, and Mr D L DICKSON (I A C) pleaded for a Scottish panel conference—indeed the two latter demanded it as a right, though Mr Dickson explained that this year there had been insufficient agenda to make it worth while, he did not think "pro borborygmi" or "as a carminative" was adequate reason for an expensive conference It was the Scottish sub committee which had decided to omit the meeting this year The motion was lost Dr HAMILTON then brought forward a motion by Midlothian urging reconstitution of the Scottish subcommittee as the Insurance Acts Committee (Scotland) with substantive powers He added that there were only three Scottish insurance practitioners on the I A C and 15 other members who could outvote them on matters of vital importance Banffshire objected to any alteration and in the person of Dr J TAYLOR expressed full satisfaction with present arrangements If Scotland had an independent I A C, he declared, Wales and Northern Ireland would want one and the strength derived from unity would be lost His witty review of the process of history whereby Scotland had taken over [illegible] by peaceful penetration persuaded the conference that

Scotland might well be content to run the British Insurance Acts Committee Dr KERR argued that the Scots were a different people with completely different problems, but Dr. DAIN pointed out that Scotland itself did not want separation—only Midlothian The medical profession of the British Isles knew no racial distinctions The result was that the conference negatived the proposal, as it has often done before.

Extension of Medical Benefit

Dr DAIN accepted the following motion by Banffshire:—

> That the signs of the times indicate it is now opportune for the I.A.C to consider the question of approaching the Government through the Minister of Health, to give to medical benefit, under the National Health Act, being made available to the dependants of the insured, and to all others, including dependants, limit of income does not exceed the present N.H.I. Further, that the National Health Insurance be separate entity, but an integral part of the general service of the country.

Dr. DAIN assured the conference that the would lose no opportunity of forwarding the of the resolution and Dr G. C ANDERSON, medi secretary of the B.M A., remarked that the of the Association was considering the whole and would in due course approach the Minister

Dr. JONAS was reappointed chairman of conference.

SPECIAL ARTICLES

THE HARVEIAN DINNER

ROYAL COLLEGE OF PHYSICIANS OF LONDON

ON the *evening of St Luke's Day, Oct 18th*, after the delivery of the Harveian Oration by Dr. JAMES COLLIER, the annual Harveian banquet was held in the Royal College of Physicians, Lord Dawson of Penn presiding The toast to the memory of William Harvey was drunk in silence

Lord DAWSON then proposed the toast of the Guests He called to mind that each year, on St Luke's Day, the College commemorates the life and work of William Harvey by worship at St Mary-le-Bow, by an oration, and by the feast now being held, each function being "conformable to the Founder's admonition and our own desires" He noted the rich learning which Dr. James Collier had manifested in the oration and the wisdom of the sermon delivered at St Mary-le-Bow by the Bishop of Southwark; and of the diocese of Southwark in Harvey's day Lord Dawson drew an interesting picture For "Bankside"—the Thames' southern shore opposite St Paul's—became the home of the drama; the Rose, the Swan, the Hope, and greatest of all the Globe theatres were built there in succession, and at the last Shakespeare produced, acted, and gathered fame Near by the *Globe* theatre were the Bull and Bear baiting rings, the Fish Ponds, and the Falcon Inn, with the Palace of the Bishop of Winchester alongside this playground of London. Harvey, said the speaker, within the length of his days and the compass of three reigns, saw this glory rise and set, saw the drama decay and the last bulls shot with the coming of the Puritans, "whose rectitude, alas, included destruction of the beautiful" Lord Dawson then mentioned by name, with appropriate compliments, some of the guests present, especially calling *attention* to the presence of Lord Greville, who had before him the problem of the future of a big London hospital, not only its site but its government He proceeded to dwell upon the educational responsibilities of the College "The physical sciences," he said, "such callings, *for* example, as those of the engineer and the chemist, depend on their technical knowledge and aptitude of craft Their problem of education is relatively simple On the other hand the qualifications for a priest, a lawyer, a doctor, a teacher, are not comprised within the faculties of a University. In addition to the universities, to which they are proud to belong, more intimate contacts are needed by students of medicine with the phases of life in which they will serve And thus it is that this College embraces the graduates of many universities here and overseas He that the Royal Colleges occupied the same ant position towards medicine as the of Court hold towards law The physici *of our greater hospitals one and all* are within its ranks, it *has become* possessed of a force which holds and guides those who pursue science and art of medicine. Our concern is not knowledge *and* its *furtherance*, but such *applica* of that knowledge as will adapt it to the grow needs of social life. For of one thing we ma sure, namely, that medicine must play an incre part in that constructive statesmanship which for its aim the health and contentment of the pe It is concerned not only with the man who is but the man who is up and doing. Each year services concerned with constructive health—it be industrial medicine, or psychology, or clinics, or maternity care. It is in such things education has a *frontier* with ourselves."

He associated with the toast Lord Gorell and Maurice Healy. To the former he alluded as a and maker of books, and an authority on educ and problems of welfare which jointly concern doctor and the educationist Of Mr. Healy he said that we had here typified the and the gay, a man who was grave in his gifts of and *oratory*, on whose shoulders rested *the* of the Immortal Tim, and a high priest in a for the Study of Food and Wine, in which the speaker was a humble acolyte

Lord GORELL, after describing amusingly the petition that existed as to which was the profession, directed his remarks to that of teac pointing out the disability under which the suffered from the non-existence of a body of regi tion for him A man could not be a doctor, lawyer, without having been tested by his colleagues He hoped that that position would attained for the teaching profession, inasmuc it was open to-day for any man, whatever his teac capacities, to call himself a teacher.

Mr MAURICE HEALY, after commenting appre on the menu, gave two eloquent *testimonies* to qualities of the doctor. He had watched during the period when he had been stretcher-bearer, the of the doctor in the trenches, and he could not too highly of the courage, good temper, and with which the ministrations had been dischar Secondly, he referred to the death of a per friend of his own who, despite success *that* have warranted him, from a worldly point of in transferring his practice to an easier environ steadily refused to leave the East End of Lo here he had become the friend of his poor patients hile they lived, and where he devoted a large part f his income to the succour of the dependents of hose who died

The toast of the Harveian Orator was then given y Prof LANGDON BROWN, who commented on the ide range of knowledge displayed by Dr Collier the Harveian Oration, adding that one never met r. Collier without learning from him something hat was worth while Dr Collier who received a arm welcome, replied briefly, mainly in justification f his use of the word invention in reference to arvey's great discovery Harvey had devised and iginated new methods, and the description of his ork as an invention, he thought, was justified, hough he knew it had been criticised

The guests included Lord Greville the joint reasurer of St George's Hospital, the Bishop of outhwark, Dr E Bramwell, President of the oyal College of Physicians, Edinburgh Sir Holburt Waring, President of the Royal College of Surgeons, ngland, Dr J S Fairbairn, President, British ollege of Obstetricians and Gynæcologists, Dr obert Hutchison, President, Royal Society of edicine, Dr Edward Mellanby, Secretary, Medical esearch Council, and Dr Bres of Cannes

MEDICINE AND THE LAW

Hospital Fees Included in Damages

SECTION 16 of the Local Government Act of 1929 posed on county councils the duty of recovering e expenses of a patient's maintenance in their spitals An intricate question, arising out of this ity, was decided last week by the Court of Appeal rs Allen, living with her husband in Chelsea, met ith an accident a year ago owing to the defective ndition of the basement steps at her home She as taken to St Luke's Hospital where she remained l her discharge last January The hospital, longing to the London County Council sent Mr llen a bill for £16 He included this amount in e damages for which he successfully sued in the ompton county court in a claim against the land rd of the Chelsea premises where the accident curred The landlord appealed on the ground at the £16 should not have been so included because r Allen had not yet paid that amount to the hospital d was in fact under no legal liability to pay it he Master of the Rolls observed in general terms the outset of his judgment that it not infrequently ppens that a husband is liable for doctor's fees hich he has not yet paid when he brings his action r damages, as he has a liability to pay the doctor's ll, the amount is added to the damages

"The Court thinks that the same principle applies re and that it was open to the county court judge to nd the amount to Mr Allen with a liability for pay nt by him of the amount to the hospital, it was in at sense that the county court judge gave judgment d in that sense that the Court supports it

Two rather technical arguments were submitted the appellant landlord First he contended at though the Act of 1929 put a duty on the ndon County Council to recover the hospital penses from the patient, the statute did not make e patient liable to pay Secondly, he referred to e concluding words of Section 16 which [illegible] that the hospital expenses "shall without prejudice to any other remedy, be recoverable summarily as a civil debt" The summary recovery of a debt before the justices, he said, was barred unless the proceedings were taken within six months, the L C C was too late with its claim, and therefore Mr Allen was not legally liable *The Master of the Rolls* rejected both arguments On the latter point he observed that the statutory saving for "any other remedy" left it open for the L C C to sue in the county court where the six months' time limit did not exist There was thus an enforceable liability upon Mr Allen to pay the hospital authority In spite of a partial difference of opinion on the part of Mr Justice Goddard, the three judges of the Court of Appeal agreed that the appeal must be dismissed, and that Mr Allen was entitled to include the hospital expenses in his claim for damages

IRELAND

(FROM OUR OWN CORRESPONDENT)

HOME HYGIENE AND THE MILK SUPPLY

THE Meath hospital is the only one of the clinical hospitals of Dublin which maintains the old custom of opening the winter session by an address This year the duty fell to Dr R F Steen one of the physicians to the hospital, and he chose as his subject Home Hygiene He dealt first with the question of school hours, a question which was much canvassed in the newspapers a year or two ago He said that the system of school hours in the country was detrimental to the health of the children The school hours were from 10 A.M. to 3 P.M. with only a short break at midday for a lunch of bread [illegible] of bread and milk By the time home was reached— 3.30 or later—the child's appetite was lost and the hot meal which should be the child's main meal was hardly touched He referred also to the [illegible] of the country, and the efforts that had been made in recent years to safeguard it [illegible] year a Bill dealing with the milk [illegible] introduced in the Dáil, which [illegible] would prevent the use of misleading [illegible] vendors. At present, and until [illegible] become law, a man might sell [illegible] microbes under a title such as [illegible] exposing himself to any penalty [illegible] milk producers had recently [illegible] name of the Tuberculosis [illegible] tion, the members of which [illegible] herds periodically tested for [illegible] milk was sold at the [illegible]

Prof W. Boxwell, speaking [illegible] Steen, said that the clean [illegible] important thing but what [illegible] country was a [illegible] Prof J W Bigger [illegible] ment as [illegible] acquired by the [illegible] were so [illegible] the [illegible] could reduce the number of deaths from [illegible] per cent in the year [illegible] he could also reduce the deaths from bovine tuberculosis [illegible] guarantee to eradicate all [illegible] Ireland within twenty years [illegible] knowledge which the medical profession [illegible] for preventing disease

THE LONDON MEDICAL EXHIBITION

Drugs and Pharmaceutical Preparations

(Continued from p 895)

(137) J. F. MACFARLAN AND CO. (32, Bethnal Green-road, E.), in addition to anæsthetic products, showed Brisettes, chloroform capsules containing 20 minims for the second stage of labour; Opoidine, a soluble injectable opium preparation for premedication in insomnia and malignant disease; and a maternity outfit containing Brisettes, opoidine with scopolamine, and scopolamine alone in ampoules.

Surgical Instruments, Appliances, and Sundries

(90) ALLEN AND HANBURYS LTD. (Bethnal Green, E) introduced a new hand soap equivalent to 1/20 carbolic and superfatted to ensure suppleness of the skin, and had a large selection of surgical instruments and appliances on view. On their stand was demonstrated the Cossor Robertson Cardiograph, a British portable electrocardiograph, the cathode ray of which is an electron beam arrangement, thus removing inherent inertia. The resulting record is singularly free from distortion, and the apparatus allows direct visual observation as well as a photographic record. The doctor can carry this small apparatus in his hand to the bedside, work it from the electric light main, a 12-volt battery, or his car, and study the cardiograph for as long as he likes, attaching a camera to make a record of the critical periods.—(7) ARMOUR AND CO, LTD. (Armour House, St. Martin's-le-Grand, E C.), showed their heat-sterilised British surgical catgut which can be supplied with eyeless needles and for which they claim great tensile strength.—(30, 31) ARNOLD AND SONS (50–52, Wigmore-street, W) had a wide range of surgical instruments and diagnostic apparatus, notably chromium-plated sterilisers, including combined models for bowls and instruments, and high-pressure steam and vacuum sterilisers; and the latest improved model of the "Arnold" operation table mounted on oil pump base, chromium plated, and with fool-proof action.—(59) AURAL APPLIANCES, LTD (135, Wigmore-street, W.), introduced the Sonotone hearing aid, a method of using balanced bone conduction in such a way that absolute equality of frequency is obtained along the whole surface of the vibrator. A special shell microphone is attached to an Ever Ready battery amplifier, and the patient hears directly through the bone, jumping the faulty middle ear altogether. The apparatus can be applied to classes, so that deaf persons can hear the radio or gramophone or the words of a lecturer.—(29) JOHN BELL AND CROYDEN (50–52, Wigmore-street, W.) showed their range of sterilised surgical dressings, which are now periodically tested at a pathological institute.—(52) BRITISH ALKALOIDS, LTD. (Winchester House, E C), emphasised again the non-toxic and non-caustic value of their antiseptic T C.P. for external and internal use.—(26) BRUCE GREEN AND CO, LTD. (14, Bloomsbury-street, W.C), showed electric ophthalmoscopes and other optical apparatus, especially a new ophthalmic transformer, a mains adaptor for converting diagnostic sets or connecting instruments to the grid.—(145) CLEMENT CLARKE, LTD. (16, Wigmore-street, W.), had many varieties of optical apparatus on show, and especially pointed out their new ophthalmoscope made of Bakelite and giving an exceptionally wide area of view; and the Synoptophore, an improved apparatus for the cultivation of binocular vision.—(141) STANLEY COX, LTD. (11, Gerrard-street, W.), showed an ultra-short wave diathermy equipment, and a posomoter for measuring ultra-violet radiation and so enabling the physician to write an accurate prescription for phototherapy.—(167) H. E CURTIS AND SON, LTD (7, Mandeville-place, W), showed a series of abdominal supports, such as "En Mains Croisées," for lifting the lower abdominal contents, and the Agordion colostomy belt, a new device.—(33A) CUXSON, GERARD AND CO., LTD. (Oldbury, Birmingham), showe surgical plasters of many kinds, notably the Varik elastic plaster bandage for varicose ulcers; al Sanoid surgical ligatures, recommended for th flexibility, strength, and silkiness, and Antoxa an rust tablets, which prevent discoloration of ste instruments during boiling by neutralising the fr oxygen in the water.—(65) THE DENVER C MANUFACTURING CO. (London, E.3) once m appeared to remind practitioners of Antiphlogi the original clay poultice which has now been in u for over 40 years and can be supplied with pl acid, ichthyol, or beta naphthol dressings.

(154) J. AND E. FERRIS, LTD. (33, Museum-str W.C), showed their well-known artificial limbs a demonstrated the principles upon which they a built. They stressed their individual study of e case and strict attention to the external appeara of the limb.—(18A) HARMAN FREESE (32, G Dover-street, S E.) showed their chemical mechanical contraceptive appliances, particul drawing attention to the Gamophile rubber occlu pessary on the Hodge Smith model, which is said give a better fit for all cases as well as for cases retroflexion; also the Eugam contraceptive lubricating jellies with the special attachment ensuring sterile application to the upper part of vagina, the dose being contained in a glass noz which can be destroyed after use.—(18) THEODO HAMBLIN, LTD. (15, Wigmore-street, C square, W.), selected from their many ophthal instruments the Lister-Morton ophthalmoscope, th Pugh Orthoptoscope automatic test type, the line reading glass; and the reinforced unsplinter lens known as Salvoc.—(4) HANOVIA, L (3, Victoria-street, S W.), displayed their actinoth peutic models, particularly the new Alpine Lamp, an improved form giving greater int and accuracy; the Kromayer Lamp Model II the general practitioner, and the Super Kromay for the specialist in focal actinic treatment.—(HAWKSLEY AND SONS, LTD (83, Wigmore-str W.), in addition to their well-known diagno instruments, had on view the tonoscillograph Prof. Plesch, a smooth, strong, and handy-s instrument which gives a very reliable reading an fitted to a special armlet which fits snugly ro any arm, however odd its shape.—(121) C J. HEW AND SON, LTD. (35, Charlotte-street, E.C), sh their useful Complete G.P. and G P Midwifery b containing essential equipment systemati arranged; Baron's Lithotomy Support; and th tannic acid outfit for the treatment of burn (17) HINDERS, LTD. (174, Estcourt-road, S W showed a number of foot supports, notably a leat one with an inside flange; and a useful elastic support (the Vigger) designed to hold both the an and the instep firmly.—(2) THE HOLBORN SURGI INSTRUMENT CO, LTD. (26, Thavies-inn, Holb circus, E C), exhibited a collection of surgical in ments and hospital furniture, including tubular consulting-room furniture; N I.M R. hypoderm syringes made of green glass; and Billing's th mometer case.—(110) THE INHALING DRUG APPARATUS CO, LTD (87, Eccleston-square, S W showed the latest model of their Collison Inhaler administering drugs through the respiratory tract

(143) JOHNSON AND JOHNSON (GREAT BRITAI LTD. (Slough, Bucks), had added to their well kno zinc ox plasters a new Drybak waterproof, which is inc spicuous and can be washed repeatedly with becoming soggy They had also a new neat-ed ("crushed edged") bandage made on a spe machine and guaranteed not to fray, and Eth catgut prepared by a new process to give plia and tensile strength.—(142) C DAVIS KEELER, L (47, Wigmore-street, W.), showed ophthalmosco and other ophthalmic apparatus, and espe demonstrated a new model of the Keeler Wide A Ophthalmoscope which, they said, gives a larger more brilliant picture of the fundus than any o

nstrument of its kind —(110) Lactéol du Dr. Boucard (30, Rue Singer, Paris) showed their lactic erment powder for wounds, ovules, suppositories, et dressings, and other preparations —(135) The London Hospital Ligature Dept (Whitechapel, E) exhibited London Hospital sterile catgut, the gature is prepared under antiseptic conditions from the moment when the intestine is removed from the nimal —(43) Medical Surgical Sundries, Ltd (37, Swinderby-road, Wembley), exhibited various specialties, including the Esseff inhaling apparatus, mergency car cases, name-plates, and diagnostic ets —(92) Monsol Ltd (Vincent House, Vincent-quare, S W), had added to their germicidal series eo-Monsol liquid germicide, which is said to be non-oxic, non-irritant, and non-staining, with a Rideal-Walker coefficient of 6, and Monsol Gel, neo monsol n jelly form which mixes instantly with water forming a powerful emulsion —(57) Pearson's Antiseptic Co, Ltd (172, Buckingham Palace road, S W) demonstrated again the value of Iodine-Medol, a non toxic and non irritant iodine and creolin ointment which has been found useful in impetigo and soriasis, Medol Analgesic ointment, and Creolin, recommended for gynæcological work, gargling, inhalation, and the irrigation of wounds —(21) W H Pettifor (11, Victoria street, S W) showed electrical aids of various pitches for the deaf, and new bone conduction aids in which the amplified currents from a microphone are supplied to a coil wound on a erromagnetic core, the Joule effect in which causes it to vibrate with the frequency of the current the vibrations being transmitted to the cochlea through bone conduction either by clenching in the teeth or by pressing on the mastoid —(40) Pharmaceutical Corporation, Ltd (39–40, Aldersgate-street E C), showed their well known Novutox local anæsthetic in bottles, rubber-capped bottles, ampoules and artridges, and their Novaseptic germicide particularly recommended for the mouth and nose —(42) Portable X-Rays, Ltd (Power-road, Chiswick W), showed a variety of negatives taken under portable conditions, and demonstrated the great advance in this service, the popularity of which is evidenced by the fact that over 2000 doctors have made use of it in the past ten years —(23) Rayner and Keeler Ltd (100, New Bond-street, W) picked out from their range of ophthalmological and diagnostic instruments a new electric auriscope with a large battery in the handle and the illumination confined to the extreme tip where it is needed —(31) Reckitt and Sons, Ltd (10, Bedford square, W C) again presented Dettol, a germicide with a Rideal Walker coefficient of 3, making it one and a half times as efficient as the Liq Cresolis Saponatus B P It was originally prepared for obstetricians and gynæcologists, and is now supplied in the form of a 30 per cent cream as well as a liquid —(12) W J. Rendell, Ltd (101–105, Rosebery avenue, E C), reminded visitors again of the proved value of their pessaries, which have now been in use for over 50 years, and distributed copies of their new booklet describing the various methods of birth control

(88) The Scholl Mfg Co, Ltd (182, St John street, E C) in addition to a display of appliances for foot trouble, demonstrated elegant rubberless surgical stockings for wear during and after injection treatment for varicose veins, elastic stockings anklets and knee-caps in various weights, a new line of chromium plated tubular furniture for the surgery and waiting room, and invalid chairs and radiant heat lamps —(62) A G Shipton and Co, Ltd (1 Great Woodstock street, W), in addition to all kinds of sterilised dressings, introduced a new cheap maternity outfit supplying the bare essentials absolutely sterile for 5s, and also a surgeon's emergency dressing package In both these outfits lint or paper is used instead of towels, so that nothing need be returned —(66) T J Smith and Nephew Ltd (, Tavistock square, W C), showed their now familiar Elastoplast and Semiplast bandages and specialty dressings, which include medicated dressings, wrist straps, and elastic cloth bandages, and the Cellona bandage and splint, containing 90 per cent of plaster-of-Paris incorporated in the cloth.—(157) Sparklets, Ltd (93, Regent-street, W.), showed a simple pocket resuscitator in which one turn of a lever releases a supply of carbon dioxide; it can be used for the treatment of spasmodic bronchial affections, and an adaptor enables it to be used also to produce carbon dioxide snow pencils instantly anywhere at a low cost —(6) The Surgical Manufacturing Co, Ltd (83, Mortimer-street, W), pointed out their small portable infra-red and radiant heat outfit; and a new surgical diathermy apparatus for use in bladder work, giving a good cutting edge under water —(30a) Edward Taylor, Ltd (Monton, Lancs), showed their well known adhesive and medicated plasters, particularly stressing Flexoplast, the elastic plaster bandage which can be supplied full-spread, ventilated, or half spread —(97) The Thermogene Co, Ltd (160, Piccadilly, W), has added to its popular medicated wadding a Vapour Rub balm in a lanolin base, acting as an anodyne and rubefacient —(105) 'Waites" Antiseptic Local Anæsthetic (Cook's Laboratories, New York) showed their local anæsthetic, which has now been in use for over 10 years, the Solila stainless steel needles and Adeo hypodermic syringes, and demonstrated the cartridge method of injection for speed and prompt effect —(123) Watson and Sons, Ltd (Sunic House, Parker-street, W C), had on view various ray apparatus, notably the Sunic Junior, a diagnostic set which can be plugged into a light or power point and has been made as fool proof as possible, they also showed Novotherm 450, a valve-operated short-wave therapy outfit, to be used for even heating at all depths —(16) The Wilson Rubber Co, Ltd (85, Buckingham avenue, Slough), had added to their range of surgical gloves an obstetrical gauntlet giving protection up to the elbow, a rubber compound post-mortem glove specially reinforced to withstand mechanical and abrasive strain; protective sleeves to be used in conjunction with all gloves, and a special "Surgeon's Glove" designed to give the maximum of elasticity, comfort, and ' touch "

Food, *Drinks*, and Vitamin Preparations

(93) Bovril, Ltd (148–166, Old-street, E C), showed again their well-known beef preparations and emphasised their nutritive value —(81) Brand and Co, Ltd (Mayfair Works Vauxhall, S W), in addition to their famous essences, jellies and meat juice, introduced a new preparation, Brandox, combining fibrous meat residue hydrolysed to a perfectly soluble state, and vitamin malt which adds diastase and vitamins A, B and D —(100, 101) Cadbury Brothers, Ltd (Bournville) dispensed comforting drinks of Bourn vita and emphasised the real food value of their milk chocolate —(111) Corn Products Co, Ltd (Bush House, W C), showed their Dextrosol brand dextrose and liquid glucose, and their Karo syrup, a mixed carbohydrate food for infants and children —(77, 78 79) Cow and Gate, Ltd (Cow and Gate House, Guildford, Surrey) in addition to their milk foods, chocolate milk, and predigested food, Peptalac had a new preparation Maltose C G, a carbohydrate mixture containing maltose dextrose soluble vitamins and vitamin D, specially prepared for the modification of milk —(115) Energen Foods Co, Ltd (Willesden N W) pointed out their starch reduced preparations and other products, including damson jam and marmalade containing no added sugar; they also introduced a new tonic called Protein Food —(10) W Gaymer and Son, Ltd (Attleborough, Norfolk) dispensed cider to well over 1000 visitors and introduced two new dry brands Gaymer Dry and Gaymer — [illegible], 96, 104) Glaxo Laboratories (56, Osnaburgh street N W) presented Sunshine Glaxo, their irradiated sterile milk food containing "Ostelin" vitamin D; Full Cream Glaxo which has the fat and protein content of cow's milk and Farex a [illegible] cereal food rich in proteins [illegible]

and minerals.—(163) Granose Foods, Ltd. (Watford), handed samples of their Granose biscuits, which contain vitamins and mineral salts, and stressed the value of their Granovita gluten bread, a palatable and nourishing product free from yeast and baking powder and containing exceptionally little carbohydrate —(72) Heudebert Dietetic Products (124, Victoria-street, S.W.) showed their palatable preparations for amylaceous dyspepsia, in which the starches are dextrinised, and of which the calorie value is 120 in the case of the Gressins and 122 per ounce for Biscottes. These preparations are also recommended for obesity.—(108) Hovis, Ltd. (London), had an exhibit showing the process of turning wheat into flour and demonstrating the value of the wheat germ —(112) Ingram and Royle, Ltd. (45, Belvedere-road, S.E.), had their familiar Contrexéville-Pavillon, Vichy water, and Hunyadi Janos, and introduced a new radium water, Caria, from Portugal, which is said to be more stable than others of its class.—(49) Keen, Robinson and Co , Ltd (Carrow Works, Norwich), drew attention to a reduction in price in their synthetic food, Almata, and distributed refreshing drinks of Robinson's patent barley water. They stressed the value of their mustard ointment, a new packing designed to make the stimulant action of mustard available in a form easy to use It can be applied directly as a poultice or rubbed in —(146) The Marmite Food Extract Co., Ltd. (Walsingham House, Seething-lane, E.C.), offered drinks and sandwiches of their well-known preparation, and drew attention to a new medical booklet, which sets forth indications for the use of Marmite in vitamin B and hæmopoietic therapeusis.—(68, 69) Nestlé and Anglo-Swiss Condensed Milk Co. (6–8, Eastcheap, E.C.), on an attractive blue and white stand, presented their Lactogen dried milk food, milk and cream, and a new acid butter milk for cases of diarrhœa, Eledon —(73) Oxo, Ltd (Thames House, Queen-street-place, E C.), presented their well-known beef extracts.—(50) Phillips Yeast Products, Ltd (Park Royal-road, N.W.), offered a microscopic demonstration that the yeast in their product is alive, and claim that the living cell has a much greater action than a dead one The vitamin B_1 potency of their product has been estimated to be 40 international units per gramme.—(136) Sister Laura's Infant and Invalid Food Co., Ltd. (Springfield Works, Bishopbriggs, Glasgow), introduced Zomogen, a liquid restorative food for anæmia and general debility; it contains no metallic iron —(126–130) Trufood, Ltd. (26, St. Martin's-le-Grand, E C.), were familiar exhibitors, with humanised Trufood; Trufood Full Cream; and Secway for digestive disorders —(125) Virol, Ltd. (Hanger-lane, Ealing, W.), offered their well-tried products Virol, Virol and Milk, and Virolax —(80) Vitalia, Ltd. (11, Springfield, Upper Clapton, E.), presented the meat juice which bears this name, and offered invigorating draughts to those who were exhausted.—(85) Vitamins, Ltd. (23, Upper Mall, W.), purveyors of Bemax vitamin B, introduced Fertilol oil of wheat germ, a preparation of vitamin E for sterility and habitual miscarriages —(89) Vitmar, Ltd. (Southfields, S.W.), besides their vitamin preparations, offered a cheerful Christmas prospect for diabetics in the form of mince pies, mincemeat, Christmas pudding, and Christmas cake free from sugar.

(To be concluded)

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 13TH, 1934

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 1 (Hackney); scarlet fever, 3509; diphtheria, 1610; enteric fever, 29; acute pneumonia (primary or influenzal), 552, puerperal fever, 42; puerperal pyrexia, 124; cerebro-spinal fever, 15; acute poliomyelitis, 25; acute polio-encephalitis, 4; encephalitis lethargica, 10; dysentery, 21; ophthal neonatorum, 85. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the L County Council on Oct 22nd–23rd was as follows Small-pox, 0, scarlet fever, 1779, diphtheria, 1709, measles, whooping-cough, 188; puerperal fever, 24 mothers (plus babies); encephalitis lethargica, 269, poliomyelitis, 9, "other diseases," 294 At St Margaret's Hospital there were 15 babies (plus 12 mothers) with ophthalmia neonatorum

Deaths.—In 121 great towns, including London, there was no death from small-pox or enteric fever, 3 (1) from measles, 3 (0) from scarlet fever, 10 from whooping-cough, 49 (9) from diphtheria, 52 from diarrhœa and enteritis under two years, and 21 (3) from influenza The figures in parentheses are those for London itself.

Leeds reported 5 of the deaths from diphtheria, Birmingham, Liverpool 3, Ilford, Bournemouth, Bootle, Sheffield each. Of the deaths from diarrhœa, 8 occurred at Leeds, 5 at Birmingham, 4 at Stoke-on-Trent, 3 each at West Ham and Liverpool

The number of stillbirths notified during the week was 236 (corresponding to a rate of 37 per 1000 total births), including 39 in London.

THE MISSION TO LEPERS

The Diamond Jubilee meeting of this international Mission was held on Friday, Oct 5th, at Kingsway Hall, W C, when lantern views displaying aspects of its work were shown by Mr Walter B Elliott, the Secretary for England Lord Meston, who presided over the afternoon meeting, delivered an informing address, and Mr. A Carless, who presided in the evening, further commended the movement to the public The Mission was founded in 1874 by Mr Wellesley C Bailey, then a young missionary in India, and at the age of 87 he remains honorary superintendent of the Mission. The story of the movement has now been published in a short book entitled "Sixty Years of Service" (1s net, 7, Bloomsbury-square, London, W C.), in which the secretary of the British Empire Leprosy Relief Association, Dr Robert Cochrane, describes in detail the work that is being done. He pays here a warm tribute to the work of Sir Leonard Rogers and Dr Herser, as a result of whose energy the Mission has been able to institute a comprehensive policy and to organise methods of prevention The efficacy of preventive measures is now being generally recognised, for it will be noted that, previous to her departure for Jamaica, Lady Denham, the wife of the Governor-Designate of Jamaica, at a meeting of the Empire Social Services Group of the Royal Empire Society, outlined the procedure now being adopted in British Guiana, describing the building of a home for the children of leper parents as a valuable piece of prophylaxis Sir Leonard Rogers at the same meeting suggested that the care of the children might be the key to the whole problem of leprosy, for children, while most susceptible to disease, could, in the vast majority of cases, be cured if they came under treatment in the early stages.

Commemoration Service at King's College Hospital.—It is 21 years since this hospital removed to its present quarters in South London A commemoration service was held last week in the Church of St Clement Danes, at which the acting Lord Mayor and Lady Patricia Ramsay were present and the Archbishop of Canterbury preached The entire staff of the hospital, including the chairman, Lord Beatty, and the managing committee of King's College, walked in procession from Australia House to the Church, followed five minutes later by a civic procession including the mayors of five metropolitan boroughs, members of parliament and of the L C C. The Bishops of London, Gloucester, and Southwark were also present The annual expenditure of the hospital has risen during the last 21 years from £22,500 to £104,000, and the mortgage of £80,000 raised to carry on the work during the war has been reduced to £57,000. The next step in the completion of the hospital is the addition of a final side to the administrative block, forming a nurses' home, at a cost of £25,000.

CORRESPONDENCE

COLLES'S FRACTURE

To the Editor of THE LANCET

SIR,—Mr G O Tippett in your issue of Oct 13th aintively but rightly asks "why must these fractures still subjected to the much vaunted but dangerous rly massage and movements" He refers to the currence of posterior displacement in cases where e break is transverse and not oblique, this tastrophe usually occurring in the third week e points out that impaction is less marked than in e oblique variety, and that in the third week osteo netic tissue being friable it is readily snapped by cessive zeal in massage or movements May I d that I believe that displacement at this time is couraged by massage and movements because discouraging immobilisation they have led to peræmia at the fractured surfaces Now Greig[1] d Watson Jones and Roberts[2] have proved that peræmia of bone causes rarefaction, decalcification, d osteoporosis A very specific example of this seen in fractures of the carpal scaphoid where badly immobilised cases the original linear crack pidly becomes a wide cyst like separation Such phenomenon occurring at the site of Colles's fracture adily allows separation, disimpaction, and recurrence deformity Brailsford[3] believes that this cyst e space is caused by pressure on cancellous bone serous fluid pouring into the hæmorrhage which s occurred between the *fragments*

Why then do so many surgeons persist in a foolish ference of these fractures to massage departments r early movements in the face of such pathological gument? If only adequate immobilisation by the rsal plaster cast as *advocated* by Böhler[4] Harry att, and Watson Jones, combined with immediate e of normal active movements, be employed, urrence of deformity will not occur ultimate nction of the wrist will be excellent the fracture ll unite more rapidly, and the patient and the spital saved the time and money that is spent on ngerous and unnecessary massage

Having absorbed the pernicious doctrine as a ident that Colles's fracture after reduction should sent at once for massage I suffered bitter appointment in many cases which I caused to be ated in such a way Since adopting the posterior ster slab method I have been delighted with the sults I now teach that the Carr's splint is ngerous since it fails to control the fractures and leed tends to force the lower fragment upwards d backwards thereby encouraging a recurrence the original deformity, moreover, it prevents the equate performance of active finger movements e long posterior splint with the short anterior o is a little better, but not much, especially when y are removed daily for massage with the plication of a well moulded, unpadded posterior ster adequate immobilisation is provided hyper nia is not produced because movements between fractured surfaces are prevented, thereby reducing parative inflammation to a minimum, at the same ne active movements are possible

It remains to treat the patient and to teach him to help and cure himself As soon as the plaster is set he must put on his coat unaided and light his first cigarette with his two hands he is told that he must eat his meals like any civilised person with a knife and fork and use the hand as much as possible No sling is allowed on any account In five weeks the cast is removed, and if union is firm and painless he is allowed to go free

Mr Watson Jones has taught me that the only three requirements in fracture treatment are careful reposition of fragments, adequate immobilisation until union is firm and painless, and active functional movements These cannot be obtained in the best massage department in the world, but depend entirely on painstaking effort on the part of the surgeon and the enthusiastic coöperation of the patient The athlete can never attain proficiency by having his muscles and tendons massaged and moved for him he must work at them intelligently and diligently the man with the fracture must imitate him

I am, Sir, yours faithfully,

A L D'ABREU

Surgical Unit Welsh National School of Medicine
Royal Infirmary Cardiff Oct 16th

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[1] Greig D M : Surgical Pathology of Bone Edinburgh 41, p 7

[2] Jones R W and Roberts R E Brit Jour Surg 1934 461

[3] Brailsford, J F Radiology of Bones and Joints London 34 p 3

[4] Böhler L Treatment of Fractures Translated by Inberg Vienna 193 p 92

DIATHERMY IN CANCER

To the Editor of THE LANCET

SIR,—The articles by Mr Norman Patterson on the use of the diathermy knife in malignant disease are of interest not only to surgeons who specialise in throat and nose work but also to general surgeons who like *myself*, have frequently to treat cases of *malignant* disease occurring in and around the mouth I wish one of your readers who has concentrated experience on the subject would publish the *results of treatment* by diathermy of malignant disease of the lips This is a lesion frequently met with *in this country* and the results of the older excision methods leave much room for improvement Most of the patients are elderly men on whom a complete excision of a large area followed by some sort of plastic *operation* is neither *feasible nor* practicable A few cases on whom I used diathermy coagulation with the button electrode over three years ago are free from *recurrence to-day*—I am referring to cases without glandular enlargement at the time of operation In cases with a small lesion I make a V shaped incision with a fine needle electrode, which gives a cleaner wound than the knife electrode and heals rapidly. Sodium evipan anæsthesia is quite satisfactory for the majority of these cases. For patients able to stand a long operation I do a dissection of the submental, submaxillary and upper cervical glands on both sides of the neck about a fortnight after the removal of the primary lesion that is, if the glands are not palpable in the beginning, if the glands are palpable and the case is not too far advanced I reverse this procedure. The time required for the operation is greatly reduced by the use of diathermy current

As regards carcinoma of the anterior half of the tongue and floor of the mouth, I consider that the operations hitherto practised by means of cold steel for these conditions and which are so beautifully described in text books of operative surgery, should be relegated to a place of historical interest they are in my opinion a mutilating procedure in which the end does not usually justify the means As a result of impressions formed in different operating theatres in my student days I have never treated or attempted to treat these cases by means of ordinary cutting or sawing operations During the period 1926–30 I referred all cases of malignant disease of the tongue and of floor of the mouth for radium treatment. I regret I am not conversant with the present-day statistics of the exponents of this method of treatment, but I have practical knowledge of the end-results of a large number of such cases treated by radium It was these results which prompted me to treat them with diathermy on the lines indicated by Mr. Patterson. While it would be premature to give an opinion on the full merits of diathermy treatment from my own practice, I can definitely state that the results appear in every way superior to radium, and that we have in the modern diathermy machine one of the greatest adjuncts to modern surgery

I am, Sir, yours faithfully,

J. F. O'CONNOR, F.R.C S.I.

County Hospital, Croom, Oct. 20th

FRESH MILK

To the Editor of THE LANCET

SIR,—As a physician and child-student of more years than I care to count, I should like to ask anyone who reads these few lines: Do you know, or do you know anybody who does know, a cleaner food than milk? Filthy as milk may be, it is the cleanest food at our disposal Milk is not a national food only, but a universal one for the mammalia Fresh milk, that is, not preserved or in any way tampered with, even by the glorified orange juice—which is, by the way, so indigestible that it makes many adults with strong stomachs suffer The breeder of prize animals does not use preserved milk. Children have been said to suffer from intestinal and bone tuberculosis due to taking tuberculous milk. It would be interesting to know the life-history of one of these children, together with the amount of milk taken, because the alleged cases I have seen have had a bad history. "Most children," says a magazine writer, "love tomatoes but hate milk" I know this type of children well, and the subsequent history of many of them is disastrous Infant and school clinics help them a great deal, but they are enfeebled old men and women long before they are 30. Has the medical man who advises preserved milk forgotten a once notorious disease known as scurvy rickets?—I am, Sir, yours faithfully,

C. F. W. COURTENAY-DUNN.

Torquay, Oct 22nd

"AN OLD PROBLEM SOLVED"

To the Editor of THE LANCET

SIR,—On seeing the annotation under this title in your issue of Sept 22nd (p. 664) I sent immediately to Dr Klaare, secretary of the "Tub Bücherei," my reply to Dr. Wolter's totally incorrect statements But Klaare has for various reasons refused the publication of the reply. How important are the successes at Pesterzsébet in the fight against consumption is shown by the fact that Prof Téchoueyres, delegated by the city of Reims, and Dr Roesle, delegated by the German Board of Health, were astonished at the results In his official report (Arch. f Soc Hyg. u Dem, 1933, No 1) Dr. Roesle made the important proposal that the material of Pesterzsébet should be examined, clinically and statistically, by an international committee The results of Pesterzsébet are year by year greater, and that gives me the force to continue to fight for the truth in the Friedmann problem I am, Sir, yours faithfully,

Budapest, Oct 16th. DR SZALAI.

UVEO-PAROTID TUBERCULOSIS?

To the Editor of THE LANCET

SIR,—In spite of Dr. Garland's letter in your of Oct 13th I am unable to share his convicti as to the tuberculous nature of uveo parotitis, hasten to admit the inadequacy of the investigatio to the exclusion of tuberculosis in the case I reporte yet the man remained in his usual health with loss of weight more than two years after the o of his symptoms, and moreover gives negati family history.

I have since looked up the notes of a second typi case in which generalised adenitis was a prominen feature The histology of an excised lymph gland conformed with the now accepted picture tuberculous giant-cell systems; yet neither th clinical nor the X ray examination suggested p monary tuberculosis The uveitis could not be sa to be characteristic of tuberculosis in the absence iris nodules The blood picture was normal, a the Mantoux reaction negative. His family hist was also negative When last heard of six mont ago he was fit and well, three and a half years af the symptoms commenced.

I am, Sir, yours faithfully,

Harley-street, W., Oct. 22nd. C B. V TAI

DEATH UNDELIVERED

To the Editor of THE LANCET

SIR,—Consideration of a case reported on p of your issue of Sept 15th prompts a query as whether it is correct procedure to allow a woma labour to die undelivered In this case one hund hours had elapsed between induction of labour a the fatal ending, but no evidence is given that t child was dead—at all events that it was known be dead—before the death of the mother Po mortem examination it is true showed that foetus was commencing to peel, but it was not bef hand known that such autolysis had occur What was there in this case to hinder the performa of Cæsarean section as soon as the women ceased live, in the hope—even if such hope were not lar of saving a living child?

I am, Sir, yours faithfully,

Manchester, Oct 17th. W. J. RUTHERFO

CORRECTION OF MEDICAL REGISTER

To the Editor of THE LANCET

SIR,—I am desired by the returning officer say that voting papers for the purpose of the fo coming election of a direct representative to General Medical Council were issued on Oct 2 to all registered medical practitioners having re tered addresses in England and Wales; and t the authorities of the council would be glad if e such practitioner who has not received a vo paper would communicate immediately with office of the Council (44, Hallam-street, London W *whether or not he proposes to vote in the electio* order to ascertain that his address is correctly ent in the Medical Register

I am, Sir, yours faithfully,

MICHAEL HESELTINE,

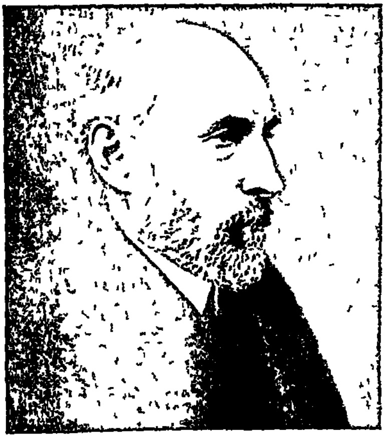
Oct 24th Registrar, General Medical Cou

SHEFFIELD CITY GENERAL HOSPITAL—Five blocks comprising operating theatre, maternity casualty blocks, and a nursing-home were open this hospital by Sir Hilton Young, the Minister of He last week.

OBITUARY

S RAMÓN Y CAJAL

With Santiago Ramon y Cajal there passes one the great pioneers of science To most medical en in this country his name means little more than association with methods for staining the nervous stem with silver and gold But in Spain all men, en the peasants, who understood nothing of his ientific achievements, revered the name of Don ntiago For Cajal in addition to being a great ientist was a great man



RAMÓN Y CAJAL

Born in 1852, the son of a country doctor Ramon Cajal appeared to be predestined for the study of stology His father eventually, by economy and rd work, became professor of anatomy at the iversity of Zaragoza, and was there that Cajal's dical studies began For ree years he worked with father illustrating with autiful sketches an atlas anatomy which unfor ately was never pub- hed A severe attack malaria in Cuba, during period of military ser- e which followed his aduation, nearly ended career But this ill s contributed to his ientific work, as with arrears of pay he was le to buy a microtome d microscope, the first at had been brought to university Thence ward, except for periods ill health, his career s an unbroken record achievement Professor anatomy at the Univer- of Valencia at the of 29, he passed by way Barcelona to the chair Histology and Pathological Anatomy in Madrid 1892, and continued his work there for 30 rs

In 1894 he obtained his first important inter ional recognition He came to London to deliver Croonian lectures before the Royal Society and s elected Fellow of the Society This tribute to al had its origin in a suggestion made by Sir rles Sherrington to Michael Foster, then the all uential secretary of the Society Foster welcomed idea, and the invitation to Cajal was issued and epted, and Cajal became Sherrington's guest on occasion A humorous episode occurred during visit, for Cajal locked his bedroom door and took key away while he was out His hostess later ting access to the room found that he had trans med the room into a little laboratory various aratus being dotted about it as he had been con ting in seclusion some final experiments In 1906 was given half the Nobel prize for his contributions medical science Recognition at home came more ly as scientific achievement was foreign to the nish culture But his foreign honours drew ention to him, and his wisdom and prophetic on in educational and political affairs soon made name honoured throughout Spain He was le Life Senator and, on his retirement from the chair of Histology, a fine laboratory, El Instituto Cajal, was built in his honour

To English speaking histologists he has been known best from his great book, "Textura del Sistema Nervioso del Hombre y Vertebrados" which appeared in Spanish between the years 1897 and 1904, and was brought up to date in the French edition of 1909 After 25 years this remains the most complete and accurate description of the finer structure of the nervous system, the reference book to which the research worker most often turns and from which many descriptions in modern text books are transcribed almost verbatim The recent English translations of his book on "Degeneration and Regeneration in the Nervous System" and of his text-book of "Histology" (the first edition of which he wrote for his students in 1889) have shown us how far his interests ranged beyond the normal histology of the nervous system The "Travaux du laboratoire de recherches biologiques de l'Université de Madrid," in which he has published his own researches and those of his associates since 1901 is further evidence of this It was his great regret that so many of his writings and those of his pupils were ignored by the scientific world owing to difficulties of language and he set himself to remedy this by editing his "Travaux" in French and superintending the translation of his more important books. But his greatest monument is perhaps the rebirth of scientific education in Spain Where he found stagnation and a complete lack of interest in science he has left active universities and a modern outlook A true son of Spain and the most modest of men, his chief, perhaps his only, interest in the honours which he received was that, through him Spain was honoured It should be added that Cajal once expressed to an English friend his belief that in the early days of the war the King of Spain and himself were the only two Spaniards in sympathy with the British intervention, and throughout his life Cajal manifested himself always a staunch friend of this country

GEORGE ALEXANDER FREDERICK HEYWORTH,

M B , B Ch Cantab

The recent death of Dr Heyworth, of Belper, occurred in particularly tragic circumstances He was playing in a hockey match between Belper and Beeston at Nottingham, and suddenly collapsed and died while being conveyed from the field to the hospital The game was his principal sport, and for it he had gained his blue at Cambridge Ill-health had kept him out of matches in the previous year but he seemed to have entirely recovered when he again took up the game.

George Alexander Frederick Heyworth was a Liverpool man, was educated at Rugby and Trinity College, Cambridge, and graduated in arts before entering the medical profession He received his clinical training at the London Hospital, and took the English double diploma in 1909 and his Cambridge medical degree some years later. After holding resident appointments he went into partnership in 1909 in a general practice in Belper He joined up on the outbreak of war and served in Belgium, and later for two years in Mesopotamia with the rank of captain in the R A M C On his return to practice he manifested particular interest in the St. John Ambulance Association and also in many religious organisations, being superintendent of the Sunday School connected with St Peter's Church, Belper, a member of the Parochial Church Council, and leader of the missionary work in the district

Dr P H. Manson-Bahr sends us the following tribute to the memory of a dead friend. "Dr. George Heyworth, of Belper, who died so tragically on Sept 29th, was a lifelong friend and companion As relatives and friends we spent our boyhood at Rugby School, our student days at Trinity College, Cambridge, and graduated together at the London Hospital. There are few who lived a cleaner, more manly and Christian-like life than George Heyworth A great sportsman and a good loyal friend, he has been taken away at the prime of his career There is one consolation—that he died, as he would have wished to, suddenly, and whilst at the height of his activities."

JOHN GARDINER, B.A. Oxon., M.R.C.S. Eng., L.R.C.P. Lond.

Dr. John Gardiner, a well-known practitioner in north Oxford, died on Oct 8th at the Acland Nursing Home from heart trouble Dr. Gardiner was a native of Maidstone and graduated in arts with honours at Oxford, proceeding with an entrance exhibition for his medical studies to the Middlesex Hospital. After obtaining the double English diplomas, he did not proceed with his medical course at Oxford, but came for family reasons to take up a general practice in the city. Here he had a large connexion, for many years was chief physician to the Cutler Boulter Dispensary, and during the war did some valuable work while in charge of the malarial diseases department in Oxford. Dr. Gardiner had retired from practice through ill-health following a severe operation

THOMAS HORTON, M.D. Durh., M R C S. Eng.

WE regret to announce the death on Oct. 10th at Weymouth of Dr. Thomas Horton in his seventy-ninth year Dr. Horton was trained as a pharmaceutical chemist, but at the late age of 35 he went to Durham College of Medicine and received his medical training at Newcastle. Two years later he entered University College Hospital, London He qualified M.R C S. Eng., L R.C.P. Lond., in 1894, and graduated M B. (with honours), B S, at Durham University in the same year. He took his M.D. in 1896. He was Tulloch and Armstrong scholar at Durham University and gold medallist and Erichsen prizeman at University College Hospital He practised successfully at Torquay for over 20 years, and was honorary surgeon to the Torbay Hospital and honorary physician to the Western Hospital for Consumption

After his retirement he devoted himself to voluntary work for the Baptist Missionary Society, being successively chairman of the medical committee and chairman of the general committee of that so His younger son was killed in the Great War. H survived by one daughter and one son who surgical practice at Weymouth.

PROF. V. N. ROZANOV

Prof Rozanov, who died on Oct 16th afte brief illness, was one of the foremost Soviet surge Born in 1872, he graduated in medicine at Mo University in 1896 with distinction. He was charge later of the surgical department of the B Hospital in Moscow, and before the war and revolution was a teacher of medicine in the Pr University After the revolution he was one of earliest medical men to come to the a the Soviet Government, working in the department of the Red Cross and the Kremlin H pital. In 1929–30 he was elected a member o Moscow Soviet, and in 1930 was appointed a me of the directorate of the Commissariat of P Health He was awarded the Order of L 1933, a distinction to which he had a personal c having attended Lenin for a bullet wound, the of an attempted assassination Rozanov wa founder of the journal *Sovremennaya Kh* (Modern Surgery), and on account of his services to surgery he is given a State funeral.

BIRMINGHAM HOSPITALS CENTRE

On Tuesday morning the Prince of Wales la foundation-stone of the new Birmingham hospitals at Edgbaston, and cut the first sod on the site o medical school which is an essential part of the sc The first instalment of the scheme thus inaugurated, the expectation of completion within three years, a general hospital of 500 beds with auxiliary and sp services, a nurses' home and the new school Paying patients, out-patient department, and a 250 general beds will have to wait until more times The enormous sum of £735,000 has been the last four years and it is not unreasonable to h the additional £250,000 required to complete this ment will be forthcoming in time for it to be opened of debt in October 1937. The hospital is being in units of 60 beds, each complete in itself Of e beds 30 will be for women and 30 for men, made one ward of 16 beds, two wards of 4 beds, and wards of 2 beds The largest ward will therefore only 16 beds Provision is being made to allow least one-fifth of the patients receiving open air trea Already laid out are the main roads across the site, are a gift from the city corporation, the framework nurses' home is beginning to be bricked in, most steelwork of the administration block is up, while ex tion for the south ward blocks is well in hand of 150 acres, of which 100 are reserved solely for purposes, should be sufficient to provide scope hospital development in Birmingham over a period least fifty years.

ENLARGEMENT OF LEEDS HOSPITAL FOR WO A new ground floor is being excavated at this to provide a better out-patients' department. The will be £12,000, which, for the present, will be pr by the sale of investments The department will 12 dressing cubicles, four examination rooms, tw sulting rooms, and other accommodation The o patients' department will be converted into thr wards containing 25 beds. The extension has been necessary by a waiting list which has grown to four the existing accommodation. Most of the patients from two to four months

MEDICAL NEWS

rsity of Oxford

Oct 18th the degree of bachelor of medicine was red on G H Buck, J P Dewsbury, C M Vaillant, B Stokes

rsity of Cambridge

E B Verney, Sheild reader in pharmacology in niversity, has been elected into a professorial fellow Downing College, and Dr Frank Goldby univer emonstrator in anatomy, has been elected into a ship at Queen's College

Oct 10th the following degrees were conferred — r —M A Rugg Gunn T N Tattersall, and A R R (by proxy), and G T Hindley

rsity of London

Nov 6th, 8th, and 9th Dr Knud Faber, professor licine in the University of Copenhagen, will give ectures entitled Newer Aspects of Gastritis and its quences The lectures will be held in Guy's Hospital al school at 5 P M and Dr Arthur Hurst will take air at the first All interested in the subject are 1 to attend

rsity of Wales

ecent examinations the following were successful —

D I B

H —K J Grant, T M A Lewis, J C R Morgan 1 Owen and Jean J Smith

College of Surgeons of Edinburgh

a meeting of the College held on Oct 16th with H H Sinclair, the president, in the chair the ing candidates who have passed the requisite nations were admitted as Fellows —

Bernard William cis Bartholomew M R C S Eng , Edmond Bourke M B Irel , in Bishop M B Cape Town , Alistair John Johnston Mason Brown M B Edin , Hugh Franklin Cameron M D Manitoba on, M B Edin , John Gerrie, M B Aberd Ellis Ellison M B Dub , Eric James Dow ndra Nath Ghosh M B Calcutta Harry Raphael Goldberg M B Edin ie M B Edin George Clifton Halliday, Wilfred Grimwade, M B Lond William Grant Kelly M B Sydney , Sydney Ronald William Douglas Mac ald Brown Kerr M B Glasg Charles Warwick McVicar, M D Manitoba , M B Glasg , George Gordon Middlemass Marshall M D Dalhousie David Nicoll Wilson M B Glasg , M R C S Eng , an Cameron Wynne Edwards M B Camb

ersity of Glasgow

Oct 20th the following degrees were conferred — —W S L McLeish and Clark Nicholson (with commenda ndation), Elizabeth J Findlay D I Leiper and John Riddell Ch B —R C Flitzik F M Rappaport and J D O (with honours) Martin Lazarowitz, Stanley Smith Hunter J H Hutchison, Benjamin Joseph, A B Semple Elder David Gersten Gertrude I R Tannahill R W W R McMillen Charles Slutsky David Ferguson (with Fulton, Duncan Livingstone, and F L Nicolson R H Adam G H Aitken, Eleanor M nder, W J Barclay James Black Ronald Black W M wick, J F D Boyd D B Brown James Brown, G G ling, J N M Chalmers Janet M S Clark G B M N P R Clyde, M N Colby G C Cooper, J L Craik Diamond D O Dickie David Douglas R J Eadie G Fee Irwin Felsun A G Ferguson J D Finlayson Fletcher, S L Frank N A Freebairn J H Gardner M Gibb, G C Gordon J M Graham J R Hendry J R Herbert James Hodge John Hughes George Hunter, nder Hutchison J S Jackson, Alexander Leitch Meyer son, William Love A D Lynch A F McDonald James nald, J A MacDougall J S L McGibbon Ethelwyn M ndrick, Alan McKenzie, Roberta M C MacLean James William Mallinson R H Martin W J Moffat Robin rch J J Murray James Parker Marion A Pearson, Pettigrew, J D Ramsay, J D Rankin J I Rankin Rankin, J G Roberts J B McN Runciman Olive Scott, Segall Ada M Sewell Helen S C Smith Nathan wite Jean W Strang D F Suttie W O G Taylor, Tennent, Arthur Thomson, William Thomson J J Tillie, Weir and J H Wilson

bilities of Voluntary Hospitals

e Yorkshire regional committee of the British itals' Association intends to have attention called e House of Commons to the heavy increase in the cost ilk as fixed by the Milk Marketing Board Leeds mary, the largest hospital in Yorkshire has had its bill of £2000 a year increased by 25 per cent The mittee has also passed a resolution asking for the of voluntary hospitals from rates which cost Leeds mary nearly £1000 a year

Society of Apothecaries of London

The Gillson scholarship which is awarded for the encouragement of original research in pathology is open to licentiates of this society Particulars will be found in our advertisement columns

At recent examinations the following were successful —

Surgery —T D R Aubrey Univ of Oxford and Bristol Royal Infirmary G A Bell and W McC Graves Morris, Guy's Hosp , D W Hoodless, Charing Cross Hosp A Lassman, Univ of Manchester , and A G Manley, St Mary's Hosp

Medicine —J W D Bull Univ of Cambridge and St George's Hosp F M Kerry Univ of Durham and J A McClintock, King's Coll Hosp

Forensic Medicine —G A Bell Guy's Hosp , J A. Carter, Univ of Cambridge and London Hosp W McC. Graves Morris Guy's Hosp , C C Joannides Univ of Graz and Westminster Hosp , O C John Univ of Manchester , J C Paterson, Univ of Oxford and St. George's Hosp and D Rocyn Jones Welsh National School of Medicine, Cardiff

Midwifery —J H Bentley and N Bickford Univ of Cambridge and Middlesex Hosp , R Fleming, Univ of Geneva and London Hosp C McK Johnston King's Coll Hosp H N Levitt Guy's Hosp , A Ponder Univ of Cambridge and Guy's Hosp and R. C Sen, Univ Coll Hosp

The following candidates, having completed the final examination, are granted the diploma of the society entitling them to practise medicine, surgery and midwifery T D R Aubrey, G A Bell, R Fleming, A G Manley, and J A McClintock

The London Hospital Dinner

In proposing the toast of the London Hospital at the old students' dinner at the Trocadero on Oct 18th, Dr James Thomas, the chairman, said that mistakes in practice, comparatively speaking, did not matter, what mattered was any hint of charlatanism within the profession It has been difficult for anyone to be a charlatan after training at a hospital whose senior physician was Dr Robert Hutchison and though Dr Hutchison—one of the great physicians of his time—had now left the active staff his personality would remain in its tradition In another of its departments the hospital had lost by the retirement of Prof William Bulloch, the personification of honest science and a man bubbling with humour Dr Thomas spoke also of losses by death within the year, naming Rampley, Henderson Whyte, George Jones, and Frank Kidd In the corporate life of the hospital the establishment of the students' hostel had marked an epoch, while in the scope of its work the block for paying patients—made possible by Lord Woolavington's gift of £10,000—meant another big advance The outstanding feature of the London, he felt, was that it made even the most careless man aware of the need for humanity As for the advance of science, Dr Thomas contented himself and his hearers with a Latin adage, applicable to current obstetrics 'Femina parturet Stet judex ridiculus mus" which he translated as "Is the lady in the family way? *Damned if I know* Ask the mouse" Dr Russell Andrews, in proposing the chairman's health, described his experiences at Primrose League and other meetings in Sussex where his merits as a speaker seem to be less fully recognised than they are at the London He recalled a song sung by Dr Thomas long ago with the clinically immoral refrain, "Sending the ruptured tubes away, with an adequate dose of Dover," and went on to say something of Dr Thomas's fine service as surgical specialist at a casualty clearing station—service still spoken of, he found, as far away as [illegible] Leaving the war as lieutenant colonel and with a D.S O the chairman had eschewed surgery in favour of his general practice, and had in it the success he deserved After the health been drunk with such enthusiasm Dr Thomas "You have been in labour with me long enough with you," and the proceedings ended in con light or heavy according to taste, temp celebration

University College Hospital

In connexion with the centenary which is being celebrated this year an made to raise £100,000 for the ext welfare and antenatal departments

Royal College of Physicians of Ireland

The annual meeting of the president and fellows was held in the college hall on Sr Luke's Day Dr John Agár Matson, a fellow since 1904, was unanimously elected president. The following bursars were elected. in medicine, Dr. W Boxwell and Dr. J. F. O'Donnell; in midwifery, Dr. B. Solomons; in medical jurisprudence, Dr. R H. Micks The president nominated Dr Boxwell as vice-president In the evening the annual dinner was held, when some 85 fellows and guests were present. Among the latter were the Lord Mayor of Dublin, the provost of Trinity College, the Archdeacon of Dublin, the president of the Royal College of Surgeons in Ireland, the president of the Royal Academy of Medicine in Ireland, and Mr Justice FitzGibbon, one of the visitors of the College

A Golden Wedding

Sir William Arbuthnot Lane and Lady Lane were at home yesterday, Thursday, Oct. 25th, to a large number of personal friends This was the date of his golden wedding, for on Oct 25th, 1884, Sir William married Miss C. J Briscoe Apart from Sir Arbuthnot Lane's personal services to Guy's Hospital, the connexion of him and his wife with that institution is remarkably close, for Lady Lane's sister was the wife of Hilton Fagge, *two names which* are famous in the history of Guy's The congratulations of his profession and his numerous friends will be extended warmly to Sir Arbuthnot and his wife.

British Institute of Philosophy

The lectures organised by the Institute commence on Thursday, Nov 1st, and will be held also on the following three Thursdays in the month at 5 P M Prof Langdon Brown opens the course with a lecture on the biology of social life, and is followed by Dr William Brown (health, self-determination, and free-will); Dr Emanuel Miller (creative activity and mental health); and Dr Crichton-Miller (belief and adaptation) The general message of the four lectures is to stress the importance of a philosophy of life for mental health Applications to attend the course should be made to the Director of Studies, British Institute of Philosophy, at University Hall, 14, Gordon-square, W.C.1. The fee is 12*s* 6*d*.

Biochemical Society of Calcutta

This society was formally inaugurated on July 6th at the All India Institute of Hygiene, with the object of the promoting of biochemical studies and research. The following committee has now been elected Prof N. M. Basu, Lieut-Colonel T. C. Boyd, Prof S Ghosh, Prof J N. Mukherjee, Dr B. B. Sen, Prof H K Sen, Prof H. E. C. Wilson, with Dr. B C Guha (hon sec) and Dr. B Ahmad (hon treas.). At the four monthly meetings already held the following papers have been read: B Ahmad: The metabolism of carotene A. C. Roy: A purely vegetable medium for the cultivation of micro-organisms S L Banerjee and H. K Sen: The catalytic activation of diastase A R Ghosh and B C Guha· Vitamin C in Indian foodstuffs R C Bhattacharjee. Snake venom and its therapeutic applications

Place of Osteopathy in Medicine

At a dinner held last Saturday at Claridge's Hotel, London, by the British Osteopathic Association, Dr Alfred Cox, late medical secretary of the British Medical Association, replied to the toast of The Art of Healing proposed by Mr P J. Hannon, M P According to the *Times* of Oct. 22nd, Dr. Cox said it was the doctor's duty to see that the patient went where he could most benefit "He would like to see incorporated all that was good in the theory of osteopathy—in the hands of those who not only knew what was good, but knew the risks—so that every medical man should be taught its practice; but that it should be practised only by those who had gone through the whole course of medical training, so that there should be no danger to the public" Dr. George Macdonald, proposing the guests, spoke of the B O A.'s ability, by scientific influences and humane methods, to give substantial assistance in the art of healing Lord Snell, chairman of the London County Council, expressed his belief that it should be legally recognised in this country, and Sir Robert Stanton Woods, M D, and the mayor of Marylebone, also replied for the guests

Congress on Gout

A congress on gout and uric acid has been the Société de Médecin de Vittel, and will be held from Sept 15th to 16th, 1935 Sir William Dr. A P. Cawadias are on the committee and is Dr. Maurice Boigey of Vittel.

Richmond Hospital, Dublin

Dr Harry Lee Parker, who has been appointed to the Richmond, Whitworth, and Hardwicke room of the late Dr. F. C. Purser, has been for on the staff of the Mayo Clinic as associate in of neurology, and the title of assistant professor logy in the University of Minnesota

A Tennis Cot

To commemorate the victories of Miss Dorothy in the women's singles and mixed doubles at W in July last, the people of Dudley and the presented a cot bearing her name to the Dudley. The amount raised was £538.

Paying Patients at Manchester

Two years ago the board of Manchester Royal appealed for £95,000 to provide a new block patients. That sum has now been somewhat secured in loans and gifts, and building will Nearly a quarter of the money is in gifts, and 491 loans ranging from £10 to £2000, mainly at interest.

Pontefract Infirmary

Lord Moynihan recently opened a new theatre and other extensions This new block second of three schemes of improvement cost altogether £20,000. Lord Moynihan said carefully examined the operation records of P Infirmary, and he congratulated the surgeons of success which would bear comparison with of the large teaching hospitals in the country

Mental Defect in Scotland

Mr McKechnie, secretary of the Scottish Department, in a recent address, gave some defect From 1919 to 1933 the number of tives in special schools and classes grew from 4184, the number of physical defectives from 5879—a plus of 80 and 73 per cent respectively might take it, he said, that at least 1 per cent population was mentally defective As there were 800,000 children in the schools, they would find about 8000 children in the classes for tives At present there were only half that While much progress had been made in certain it was certain there were still many children in the school who ought to be in the special school, instead of having no opportunity to learn

Presentations to Medical Practitioners

At a gathering of more than 600 people Cowan Wilson, of Blantyre last month received a testimonial in celebration of his jubilee as a practitioner in the town —Dr Robert Gemmell, retired after 35 years' practice in New Cumnock, received a testimonial, in the form of a silver a cheque, from his patients and fellow-citizens dinner held in Devizes on Sept 22nd 80 members staff of the Wiltshire County Mental Hospital enter Dr S J Cole on his retirement after 32 years institution, for 20 of which he has been medical intendent —On Oct. 12th a complimentary given in Edinburgh to Dr Isabel Venters, gynæcologist to the Edinburgh Hospital for Children Mrs Chalmers Watson, M D, said Venters was really the successor of the first practised medicine in Edinburgh, Dr Sophia Jex and had been foster-mother to Dr Jex Blake's children—her dispensary and hospital Lady Balfour, M B, who presided, described her as one pioneers among medical women, but Dr Venters disclaimed this title, saying that Dr Elsie Inglis had been fortunate in coming to the study of when the battle for the education of women had been won

ADDRESSES AND ORIGINAL ARTICLES

TALIPES EQUINO-VARUS *

BY DENIS BROWNE, M.B. Sydney, F.R.C.S. Eng.
SURGEON TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET, LONDON

Pathology

THE normal new-born child shows evidences of the pressure of its surroundings before birth. In the uterus it has been folded into the smallest possible space, and it keeps this attitude for a short time after birth, as the wings of an emergent insect show the folds in which they lay in the cocoon. The bent knees are held up against the belly in a position that would be extremely uncomfortable for an adult, and the feet are fixed in calcaneus, going up much further than the adult range of movement, and downwards into equinus not so far.

In addition, wherever a sharp bony point has lain against the uterine wall, the tissues over it have been compressed and become adherent, so that they remain as small pits when with the release of pressure the surrounding parts stand up. "Dimples" of this sort, best marked in the young and plump, are familiar to everyone over the knuckles, the elbows, and the posterior superior iliac spines.

THE GROUP OF "MOULDING DEFORMITIES" TO WHICH TALIPES BELONGS

If the single assumption is made that this mechanical pressure on the fœtus may in certain cases be increased, it can be deduced that a certain series of deformities would follow, and in actual life all these deformities are found exactly as they can be thus prophesied, in their external shapes, their internal structure, their changes of function, their relative frequencies, and their association with each other.

Abnormal dimples are caused by increased pressure bringing into contact with the uterine walls bony points that normally would not touch it. They are found as depressed marks, usually called scars, over the external condyle of the femur (Fig. 3), the acromial process of the scapula, or the apex of the bend in a "congenital fracture" of the tibia. Occasionally these marks run the entire length of a long bone—the femur, or the subcutaneous edge of the tibia in a case of absent fibula.

Lumbar spina bifida could be produced by a very early increase of pressure exaggerating the normal curve of the back and so interfering with the joining of the edges of the neural groove. This may be illustrated by the transverse gaping of a longitudinal slit in a rubber tube when it is bent. As explained later there would be a special liability to moulding deformities of the feet in these cases. (Fig. 1 A.)

Acrocephalo-syndactyly could be caused by the hands becoming jammed between the uterine walls and the front or sides of the head. (Fig. 1 B.) If this increased the transverse diameter of the head the palatine processes would have difficulty in joining, so explaining the frequency of cleft palate in this condition.

Mouldings of the hands alone would be infrequent, owing to the shelter of the overhanging head. The displacement would be usually towards the palmar aspect, from pressure of the uterus against the dorsum.

Mouldings of the feet would be the commonest of all deformities of this class, as the feet can be more displaced than any other part, are not sheltered by the head, and owing to their stiff consistency and irregular shape do not conform as easily as do the hands to the uterine concavity. (a) *Calcaneus* from pressure on the soles of the feet in the normal folded legged position would be the most common. It is difficult to say when this exceeds the normal calcaneus of the newly born enough to count as a deformity. (Fig. 1 F.) (b) *Longitudinal bending* of the foot would be the next most common, occurring in the same folded legged position when the feet swing inwards, taking the uterine pressure on their outer borders instead of on their soles. (Fig. 2.) It is to this group that the classical "talipes equino-varus" belongs. (c) *Mouldings of the feet combined with spina bifida* would be caused by the abnormal bending of the back, which has prevented the proper formation of the spine, pointing the lower limb buds upwards, so that the legs would grow straight upwards past the neck instead of folding normally in front of the belly. The result would be the well-known syndrome of *flexed hips, hyper-extended knees, and irregular calcaneus talipes.* (Figs. 1 A and 1 F.) Other forms of talipes with corresponding joint positions could also occur, but less commonly. (d) *Atypical talipes* of various kinds are occasionally found. But their form is always consistent with the pressure of the uterine wall on whichever aspect of the foot the position of the leg has left exposed to it. (Figs. 1 E and 1 D.) An interesting analogy for acrocephalo-syndactyly is the case in Fig. 1 C, with exactly corresponding mutual damage of the feet and face combined with the necessary flexion of hips and hyper-extension of knees to bring them together.

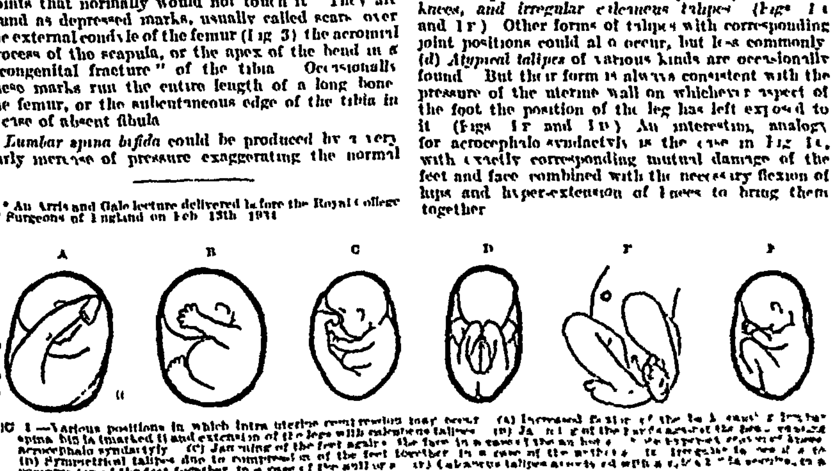


FIG. 1.—Various positions in which intra-uterine compression may occur. (A) Increased flexion of the back causing lumbar spina bifida (marked S) and extension of the legs with calcaneus talipes. (B) Jamming of the hands against the head, causing acrocephalo-syndactyly. (C) Jamming of the feet against the face in a case of the author's [illegible]. (D) Symmetrical talipes due to compression of the feet together in a case of the author's. (E) Irregular [illegible] compression of the feet together in a case of the author's. (F) Calcaneus talipes associated with [illegible] in a case of the author's.

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* An Arris and Gale lecture delivered before the Royal College of Surgeons of England on Feb. 13th, 1934.

TRUE NATURE OF THE DEFORMITY CALLED "TALIPES EQUINO-VARUS"

When the foot which has been caught in the folded-legged position turns inward under the pressure of the uterine wall, there ensues a series of deformities gradually increasing in severity with increase in the pressure. This series can be conveniently divided into three parts.

In *the first the forepart of the foot alone meets* the moulding force and is bent inwards. This is usually called "metatarsal varus" (Figs. 2 and 3) (following the confusing practice of describing deformities in terms of normal movements of joints), though the sole of the foot remains horizontal so that there is no varus in the ordinary sense.

In the second degree of pressure the whole foot is moulded to conform to the uterine curve, the heel bending inwards behind the fixed point of the ankle-joint and the forefoot in front of it In addition the pressure on the outer side swings the foot as a whole into varus, and, owing to the inclinations of the joint surfaces, into equinus as well. The classical description ignores the actual bending deformity, and describes the result in terms of the secondary *joint* movements as "equino-varus." (Figs. 2 and 3)

In the final degree the bending of the foot is so severe that the forepart swings round to lie with the big toe pointing straight upwards along the tibia. The equinus completely disappears, and the deformity is described as "extreme varus," though the support of the underlying thigh prevents the plane of the *sole from passing much beyond the vertical. (Figs.* 2 and 4 A.)

In all three degrees the leg bones are prevented from twisting by the balancing of the pressure on the heel against that on the forefoot, and prevented from *bending by the support of the underlying* opposite thigh. The muscles are atrophied, as would be expected *from immobilisation ; and their balance* is upset owing to the stretching of the peronei and extensors while their stronger opposing groups are left contracted. But there is no true paralysis.

On dissection the internal structure of the foot is exactly what would be expected from its appearance, the greatest displacement being round the apex of the curve at the astragalo joint.

FIG. 3.—*Case of "talipes equino-varus"* of the right "metatarsal varus" of the left. Note the dimples external condyles of the femur, in series with those knuckles

When the deformity is single it is never as if one foot is normal there cannot have been a high pressure. When it is double the def never exactly equal, as the foot that has *outer side in the cross-legged position* is about 10 per cent worse than the sheltered But there is never a *very severe deformity* on one and a very slight one on the other (Figs 3 and

This deformity, in which the stronger mu are favoured, gets worse automatically, in distinction to the common calcaneus, which is corrective owing to excess of power of the muscles *over* their op nents. In addition, w ing increases the curve which weight is tra mitted to the ground, clothes and bedclot bend the forefoot and in, and the aut reaction of a child to splint is to turn the fo foot into equino- when trying to drag it f

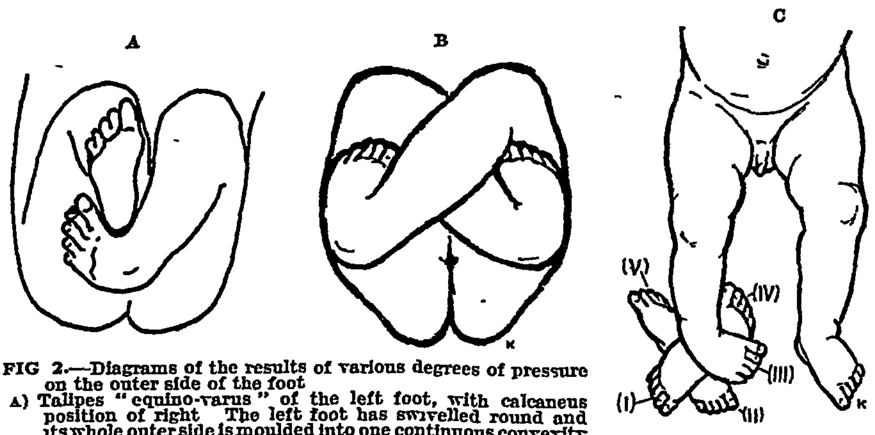


FIG 2.—Diagrams of the results of various degrees of pressure on the outer side of the foot
A) Talipes "equino-varus" of the left foot, with calcaneus position of right The left foot has swivelled round and its whole outer side is moulded into one continuous convexity corresponding to the concavity of the uterus The right foot is taking the uterine pressure on its sole in the normal way, so that an increase of pressure will only result in an increase of the normal calcaneus of the newly born.
(B) "Extreme varus" talipes of both feet, that of the left being worse than that of the right, owing to its position on the outer side in the crossing of the legs This is the position responsible for the deformity in Fig 4 A
(C) Composite diagram of the normal positions of the feet, the three main degrees of deformity due to pressure on the outer side of the forefoot, and the "reversed deformity" corresponding to this This diagram suggests to me that the most accurate naming of these would be by means of their positions on a clock-face, the normal position being 8 o'clock, the "orthopædic position" 6 o'clock, "extreme varus" 1 o'clock, &c (i) Normal position of foot (ii) "Metatarsal varus," the first degree of twisting inwards under pressure (iii) "Talipes equino-varus," the next degree (iv) "Extreme varus," the maximum degree of inward twisting (v) The reversed deformity from position iv, the only one with any claim to be called "over-correction"

Rejected Teaching the Subject

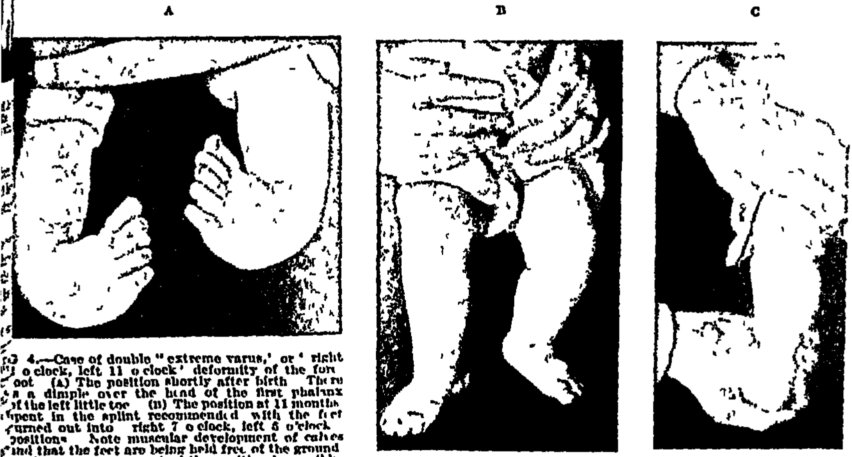
Hypothesis of

Various explanatio the cause of the condi are put forward in addi to the very old and s one that is adopted in paper. All of them an Achillean weak in the heel, for characteristic defor they offer no explan whatever, nor do of them give rea the association of the different elements of "moulding" deformities and their relative quencies

1 *Nervous causation*—The main point in favour of s is the occasional coexistence of spinal deformities d their secondary paralytic and trophic effects I have eady offered an explanation for this Apart from this e nerves could only act through the muscles, and the ype of the foot has only a superficial resemblance to ything that could be produced by purely muscular tion

2 *Arrested development*—This explanation is that ring intra uterine life the foot goes through various olutions, and that arrest at appropriate stages accounts the various types of talipes The objection to it is that sitions and shapes with any real resemblance to talipes ver occur in the normal development of the fœtus

3 *Hydraulic pressure*—Jansen suggests that certain pes of cells are more sensitive than others, and so can harmed disproportionately if there should be an



3 4.—Case of double "extreme varus," or "right 1 o'clock, left 11 o'clock" deformity of the fore oot (A) The position shortly after birth There a dimple over the head of the first phalanx of the left little toe (B) The position at 11 months spent in the splint recommended with the feet turned out into "right 7 o'clock, left 5 o'clock" positions Note muscular development of calves and that the feet are being held free of the ground so that no arrangement of the position is possible C) The manipulations used for gaining the "reversed deformity" position showing the range of painless movement of the orefoot

bnormal increased pressure of the amniotic fluid This rational as an explanation for conditions like achondro lasia or cleido-cranial dysostosis, where the damage is onfined to certain types of cells irrespective of the region f the body in which they lie But it obviously will not pply to the case of talipes, where the damage is confined o one region of the body irrespective of the types of cells hich compose it

4 *Defective germ plasm* as an explanation gives no eason why the deformities should always conform to hapes consistent with moulding by the uterine wall nstead of taking an infinite variety of forms like those of lints or potatoes

5 *Congenital dislocation of the astragalo-scaphoid joint* suggested by Brockman as a cause It is obvious from he appearance of the foot that this joint must be dis laced to an extent corresponding to the severity of the ongitudinal bending But how this displacement moulds he heel or tilts the foot into varus I cannot see Apart rom this it gives no explanation at all of the atypical orms of talipes nor of the association of deformities

Objections to the mechanical compression hypothesis of causation—The most rational one is that there are no consistent records of lack of amniotic fluid at the irths of children with club feet The amount of his fluid at any birth, however is almost always very vaguely estimated, and a normal amount then does not necessarily mean a normal amount throughout pregnancy Mercer objects that compression is unlikely as a cause because talipes is uncommon in twins, but then Lovett and Jones say that it is more common in multiple pregnancies Many writers mix up mechanical with hydraulic pressure and argue accordingly, or object that it does not explain such conditions as intra uterine amputations or achondroplasia

The name "talipes equino varus" if the account given here is correct, is not only incomplete in the description of the deformity that it appears to give, but actually misleading All deformities must be considered and described in three dimensions But the classical name mentions the equinus which is a secondary and inconstant deformity round an axis running horizontally from side to side through the ankle, it mentions the varus, which is a secondary *deformity round an axis running horizontally from* back to front through the ankle, and fails entirely to mention the primary and constant deformity of the curving inwards of the sole and heel round a perpendicular axis at right angles to each of the other two

Treatment

AIMS OF TREATMENT

In correcting the structural defects the one important thing is to get the forefoot naturally used and held at the correct angle to the sagittal plane of the body, that is to say, pointing outwards about 20°, as in the military position of attention or the classical pose for boxing (Fig 4 B) In addition of course there must be full range of movement of the joints No direct attack is necessary upon the deformity of the heel, if the forefoot is used correctly and freely it will grow from its inward bending to perfect straightness and almost normal size In correcting the functional defects the defective muscle balance and the weakness of the atrophied muscles, it is necessary that whatever device [illegible] the position of the forefoot should also permit of its being used. This principle of the simultaneous correction of structure and function is of the utmost importance.

METHODS OF TREATMENT

Correcting the longitudinal bend of the foot can be very well done by the hands alone up to about 2 years of age. When the foot becomes too rigid this can be done by a woodworker's vice, fixed to the end of the operating table by a large ball-and-socket joint. On one side of the vice a block of wood is fixed, with a notch cut in it so that the two edges of the notch act as points of pressure; between these two points in the opposite direction presses the apex of a wedge-shaped prominence on a similar block on the other side. The foot is placed between these two blocks, with the single point pressing on the apex of the longitudinal curve, just in front of the external malleolus where the bone is strongest, and its concave inner border opposite the concavity of the notch in the other block. When the vice is screwed up, the deformity is reversed by forcing the foot into the notch so that it has a longitudinal bend convex inwards instead of outwards

Gaining normal movement of the joints is done by forcing the forefoot round into full "calcaneo-valgus." (Figs 4C and 2C) This again can best be done by the hands up to the limits of their strength To get their full force the palm should be applied to the sole of the foot, while the four fingers curl round the back of the ankle.

When the feet are too stiff for this, the same result can be gained by an arrangement rather like a large pair of nut-crackers (Fig. 6), the one essential mechanical point about them being that the axis of the hinge-joint that connects the two limbs must coincide with the axis of the ankle-joint. The limbs of the "nut-crackers" are stout oak boards; the hinges are bolts joined together by eyes at their ends. By means of butterfly-nuts on the bolts it is possible to control the position of the hinges and the inclination of the boards to each other to suit different cases. The patient's leg is strapped to the lower board by sticking-plaster, the foot turned outwards to a suitable degree against the upper one, and then are forced together

The maintenance of the bending out of the foot together with allowing the action of the muscl the use of the foot, can be obtained by connecting feet horizontally at the desired angles to the sa plane (Fig. 5) To hold the feet I use foot made by cutting out an L-shaped piece of 14 hard aluminium, and bending up one side to the external malleolus and bear against the side of the leg. Then these are fixed by fri joints at any desired angle to an aluminium bar, normal feet pointing the usual 20° outw and talipes feet anything up to the normal of 90° outward from the sagittal plane. Th is no space here to discuss the extremely compli mechanical and anatomical factors of this def but since I stumbled upon it the treatment of tali has become one of the easy departments of sur instead of one of the difficult ones. It corrects main structural element of the deformity efficient at the same time allowing the correction of functional troubles. The other devices which have used have been inefficient in correcting structu and ignore function completely.

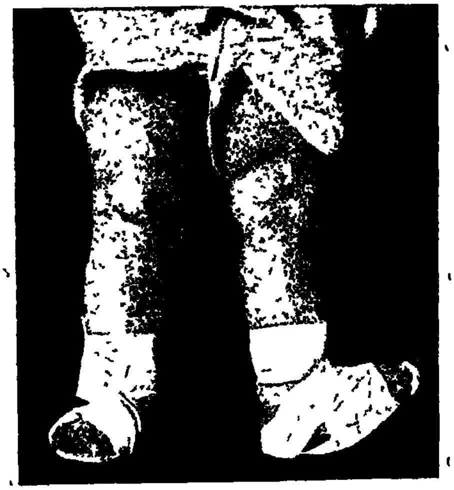


FIG. 5.—The splint applied to a fairly severe left talipes Note that the foot is turned out into the "left half-past 2 o'clock" position, the sole-piece of the splint being bent into valgus to do this Compare the position of the foot in *regard to the body* as a whole with Fig. 8 Note absence of wasting of calf.

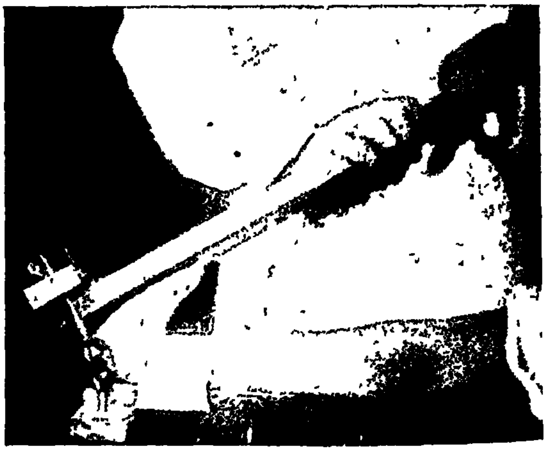


FIG 6.—The "nut-crackers" used to reverse the deformity Note that they attempt to reproduce the action of the hand in Fig 4 C, and that there is nothing to injure the skin or the joints The upper board might have been adjusted by the screws to give more valgus The foot was a very stiff one on which several operations had been done.

Small babies spend the first nine months or continuously fixed in this splint with sticking pla with fortnightly changes and manipulations Th are encouraged to kick and to stand up in the spl as much as possible. When the feet are both he naturally in the correct position of rest, and have th full range of movement, and the child can take a fe steps with support, the sticking-plaster in which has spent all its life so far is changed for a pair boots, riveted to the sole pieces to hold the fe in the same position as before These boots a completely straight in shape, so that there is difference between right and left feet, have open to and unlace completely from one end to the othe In consequence there is no need for complicate fittings, and one pair will usually last a child the complete period of treatment, the toes simp sticking out of the open end as the foot grows

Thus the child can be let off the splint for a when necessary, but its feet are held quite secur when the splint is applied, as it should invariably be during sleep or rest Any mother understands how to put on a pair of boots, and no child can kick out of them

Older children, after the feet have been corrected by the vice described, can be put directly into this boot splint and given walking practice and manipulations as soon as possible I have often been struck by the absence of pain and tenderness after forcible correction Possibly it is due to the lack of any friction and displacement of the skin, of the sort that is unavoidable with the Thomas wrench If, however, great violence has been used it is probably best to put up the feet in plaster of Paris for a week or so, fixing them to the splint at the required angle "Bunion plasters" of thick felt are stuck over the three bony points most liable to pressure, the two malleoli and the underside of the joint of the big toe Then a light plaster is put on and allowed to set while the foot is fixed on the ground and the weight of the surgeon used to force the foot into calcaneo-valgus by pressing the knee downwards and forwards

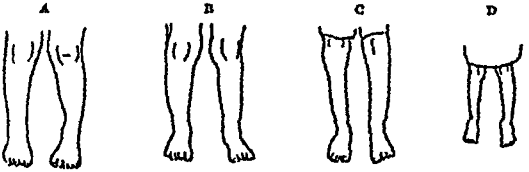


FIG 7—Tracings of illustrations in standard text books to show what are considered satisfactory results of open operations (A) A case before open operation (B) Same case as (A) after open operation feet barely into "orthopædic position" and still far short of normal inclination to the body Admittedly in this case the deformity before operating is less severe than in most illustrations but the position afterwards is the rule (C) Another typical result of open operation (D) Result of open operation showing right foot not brought even into "orthopædic position" so that to get it to point straight forward the knee-cap has to be rotated out.

REJECTED FACTORS IN TREATMENT

The conception of the normal position of the foot as pointing straight forward is, judging from their illustrations and the splints they design, almost invariable *among orthopædic surgeons* Figs 7 and 8 show how they are content to bring the bending in of the forefoot back only to the sagittal plane, instead of to an angle of 20° outward from it, which I believe to be the true normal position of rest and most efficient use If I am correct it is not strange that it should be noted that these cases have an inveterate tendency to relapse as they have never been brought to normal position

Apart from the opinions on this point of the "Manual of Infantry Training" and the teachers of boxing, it may be noted that Hamilton Russell used to teach that the very common occurrence of pointing in of the toe after fractures of the tibia was due to the vertical position of the foot piece of the ordinary back splint upon which so many of them are treated.

use of the term "over correction"—This is
enough when it is applied to the process of
a deformity back to normal, and then continu
process so that a deformity the reverse of the
one is produced But it appears to me a
on of thought to use it for putting the foot in a
on which its joints can quite easily compass
ly. If one turns a knock knee into a bowleg one has over-corrected it, but would one say that a flexed elbow has been over-corrected when it is straightened out?

I suggest that the proper phrase to use to clear our minds is that of reversing a position or a deformity rather than over correcting it A tibia that is bent inwards can be brought to normal, and then by continuing the use of the same force brought into the reversed *deformity* of being bent outwards A foot fixed in equinus can be brought into the normal position of rest, and then by continuing the use of the same force into the reversed *position* of calcaneus

The position that orthopædic surgeons call ove
correction of talipes equino varus is a curious o
(Fig 8) It corresponds to the use of the Thom
wrench in that the three elements of the deform
are corrected with a thoroughness in inverse ratio
their importance The varus is sometimes, tho
not always, corrected to the normal limits of val
(Fig 8 A), the equinus is corrected to much less t
the normal limits of calcaneus in the child or in t
races which have preserved full freedom of the a
joint by habitually squatting and the inward
of the forefoot, the most important part c
deformity and the only one in which over-cor
would be either possible or useful, is not even l

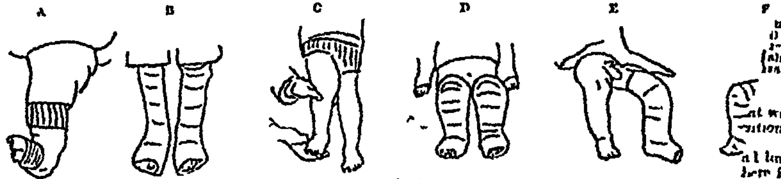


FIG 8—Unselected series of tracings of illustrations in standard text books to show what the authors either accept or imply to be over-correction Note that in none of them is the normal inclination of the foot to the body

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two areas

into the normal position in regard to
whole

The Thomas wrench—Everyone ag
only fault of the hands as instrument
club feet is lack of strength, that
where the unaided force of the human hand
come the resistance of the tissues no
should be considered Is it not
when something stronger is required
precisely the same deformity, or
mechanism working on totally dif
the Thomas wrench? The defo
same surely it is not an illogical
the Thomas wrench is the best

* 2

it we should use a miniature one on babies' feet, or if the hands are the best instruments, we should imitate them as well as we are able to manipulate the feet of older children ?

The Thomas wrench is, as its name indicates, a modification of the instrument commonly used for twisting such things as pipes and nuts, a function quite distinct from the bending of short stiff structures that is needed in correcting a club-foot The inefficiency of its bending action can be clearly shown by attempting to break a 6-in length of broom-stick with it, and then trying the same thing with the vice On the elements of the talipes deformity it is most efficient on the least important, the varus; it is less efficient on the equinus, and least efficient of all on the primary curve of the foot There are no pictures of the use of the Thomas wrench to obtain a complete reversal of the deformity, of the kind obtained by the hand in Fig 4c or by the vice in Fig 6, and this is for the reason that it is impossible to obtain this position by its use Finally, its rubber rollers, which grip the skin and slip together with it over the bones beneath, produce the maximum of soreness.

It is, of course, possible to break down the bony resistance of a foot by the skilled use of this instrument. But this breaking-down is distributed over the weaker parts of the skeleton, the metatarsals and ankle-joint, rather than concentrated where it should be, on the block of bone that forms the centre f the curve just under and in front of the external alleolus.

Tenotomies, many of which I have performed myself, now regard as among the worst of surgical crimes. ie temporary ease of forcing the foot into position er cutting the tendo Achillis or the tibiales is gained the price of irreparable damage to the patient muscles, cut off from their insertions, shrink and degenerate permanently; it is curious, mbering the disastrous effects of cut tendons on sefulness of the hands, to see how lightly a similar is inflicted upon the feet. Besides this, the asation of blood between the separated ends tendon and its subsequent organisation into contracting scar tissue have the final result ng correction very much more difficult than efore, instead of easier

operations I regard as unnecessary except occasionally to undo the results of previous
inner rations. The photographs of cases before
in the ations show conditions within the power
the def ical correction, and after operation they
notch s a considerable amount of the deformity
inwards s (Fig 7) The price paid in stiffening
Gainu and wasting of the leg is well known,
forcing se their great failing is that they have
valgus." increasing the range of movement of
be done b vay that manipulation does
To get th *aris* in treating talipes has the faults
to the sol sewhere. It gives complete immobilisa-
round the ie last thing wanted, except occasionally
When th ie to ensure freedom from pain after
can be gain *lations*.
pair of n r is excellent as a means of transmit-
mechanical ie foot from some fixed point. But
of the hinge which employ sticking-plaster alone,
coincide with at there is no fixed point available
of the "nut ble to correct properly the bending-
hinges are bol n relation to the body as a whole
By means of b g-plaster.
to control the p n the splint I have recommended,
of the boards is that the efficiency of club-foot
The patient's reatly increased by fixing them
by sticking-plas

at definite angles to a connecting-bar The f forms used are of no great importance I my own models are cheaper to make and easier adjust than most

Grip on the bent knee—The commonest way turning the forefoot outwards is, of course, the of the bent knee as the point of purchase disadvantages are the putting of the muscles out action, and the production of knock-knees by stret ing of the internal lateral ligament It is qu obviously inferior in every way to the other prir

Results

Results are implicit in the argument. if it correct they must be much better than those obtain by other methods I believe them to be particularly in the suppleness of the foot and muscular development of the calf Of course surgeon's difficulties vary with the degree of of the foot, but any case that comes for soon after birth and that can be fairly called equi varus (that is to say in which the foot has not twisted up and in beyond the horizontal) should permanently cured by the time the child can w alone The calf should be only about a quarter an inch less in circumference than the sound in unilateral deformities, and it should be possi to get both calves equal by exercises in later ye if it is considered worth the trouble.

Previous treatment may, of course, render a res like this unobtainable If the foot has b immobilised in plaster the original wasting of the will be greatly increased ; if a tendon has been it will be worse still and the ankle will be stiff addition ; while an open operation means that child will be permanently in the cripple class

Summary

I have tried to cover so much ground in the lin of this paper that it is rather like a summ itself. It is an attack upon the whole of pres teaching about this condition, and this attack t on three main points (1) That the accepting of compression hypothesis of the causation of tal places it in a definite group of congenital deformi explains all its variations of structure and functi and gives a valuable clue to its treatment by show the true nature of the deformity (2) That essential physiological principle in treatment is t structure and function shall be corrected sim taneously; in other words, that the foot must kept active while its shape is being corrected difference this makes to the speed of correction m be seen to be believed (3) That the essen mechanical principle is that the position of one f can be controlled by the other in relation to sagittal plane of the body

My best thanks are due to Mr. C A Keogh, F R C for his drawings in illustration of this paper It hardly necessary to point out that not all of drawings are his ; the responsibility for the oth is the author's alone

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STERIOR INFERIOR CEREBELLAR THROMBOSIS

WITH UNUSUAL FEATURES

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CLUSION of a posterior cerebellar artery gives to a well-defined group of symptoms In a typical there is sudden vertigo, inability to swallow, and or less sensory loss, usually unilateral in ibution and of dissociated kind

e case to be described here, whilst conforming he above classical syndrome so that a correct nosis was easily made, proved on further investi- on to differ materially from any of those hitherto rded Instead of the unilateral sensory loss being he "dissociated" type, all forms of superficial sthesia were involved to a greater or less extent the whole of the affected area The man died of mia within three months of the attack and it expected that histological examination would al some additional lesion which would explain anomaly The only lesion found was such as is wn to follow occlusion of the posterior inferior bellar artery

Case Record

glass-blower, aged 33, a patient of Dr H E Laughlin of Barnsley, was admitted to the field Royal Hospital on Jan 25th, 1931

HISTORY

bout three months ago, he had had a series of bad laches followed by severe epistaxis One afternoon, lst taking tea at a friend's house, he suddenly felt y, and vomited The right side of his face was also wn up and the right eye closed (He was quite certain ut it being the right eye) He also found that he had control of the right arm and leg He could move n but did not know exactly where he was putting n, and could not feel whether the right foot was on ground or not At the same time he was unable to llow anything He did *not* lose consciousness With siderable difficulty he was eventually able to walk home out a mile), his wife supporting him

or the next three days he could not swallow either ds or liquids, and he said that he had lost all sensation his right side After that he began to be able to swallow ids, and on admission could do so fairly well though still had some difficulty with solids After five or six ks sensation began to return in the right side in the m of a painful tingling when any part of the side was osed to heat or cold The right side of the face also ame painful on shaving Two days before admission found that he began to have pain in the right hand l leg, and had some difficulty in moving the latter

revious health —"Rheumatism" three years ago oid operation at age of 11 years Had a discharging ht ear in 1918 *Family history* nothing significant ther crippled with rheumatism, father still alive and ll

CONDITION ON ADMISSION

Looked ill Respiration rate 20 Temperature 99.5° F lse rate 100–110 Vessel walls thickened and hard ood pressure: systolic 225; diastolic 150 Apex beat fifth left space, 4 in from midline Dullness increased centuated second sound in aortic area Systolic murmur apex conducted to axilla Urine: specific gravity 04–1010 acid albumin + +; no casts or red cells; erage daily quantity about 750 c cm

Cranial nerves —I Sense of smell normal II No loss of vision fields apparently normal Some of the retinal arteries show a "silver wire" appearance, no papillœdema, retinitis or hæmorrhages III, IV, and VI Extrinsic eye muscles normal in action no squint or deviation, no nystagmus, no ptosis, pupils small, round, equal, active to light and on accommodation VII No facial paralysis, but slight overaction of the right side pulling up the right corner of the mouth, eyes close normally V Anæsthesia on the right side of the face up to the level of the eyebrow, touch and pain sense lost here, but *temperature* still imperfectly appreciated Masseters and temporals contract normally VIII Hearing good—15 in watch each side IX and XI No dysphagia now (right side of soft palate moves little) articulation shows no defect XII Tongue protruded straight, readily, and without *tremor*

Arms —Not wasted, not spastic, no contractures Muscular power of right arm is less than that of left but there is no paralysis of any group of muscles Biceps jerks increased equally on two sides Triceps and supinator jerks not obtained Coördination fairly good no obvious ataxia in right arm Joint sense of position good Stereognosis impaired on right side

Abdomen —Anæsthesia of right half, incomplete in an area below the umbilicus Reflexes brisk on both sides—more marked on the right than the left No rigidity

Legs —No wasting Both legs rather stiff No spasticity Motor power fairly good in left leg, rather poor in right, though the inability to lift the knee against opposition seems to be chiefly due to the pain complained of at the right hip He can keep the leg extended when the thigh is lifted off the bed Knee jerks present on both sides but not easily obtained Ankle jerks not obtained Plantar reflexes right feeble flexion, left violent withdrawal of foot and flexion of toes Sense of position of feet is fairly good Slight ataxia in the right leg

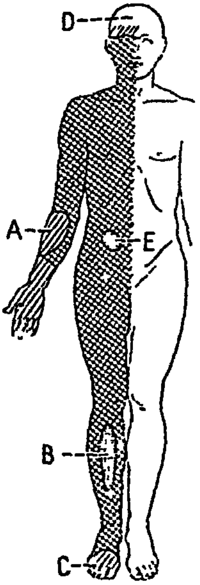


FIG 1 —Area of distribution of sensory loss (shaded) At A C and E light touch is felt. At B and C pain is felt. At D all sensation normal

Sensation —Over the right half of the trunk and limbs as high as the level of the eyebrow (Fig 1, D) there is a gross loss of sensation Light touch is lost except for a small area over the peripheral half of the dorsum of the right foot and toes (Fig 1 C) another in the lower abdomen (E) and another around the hollow of the right elbow (A) There is partial loss for a short distance above the right eyebrow Sensibility to slight differences of temperature is very much diminished over the same area but gross differences are detected with difficulty There is complete analgesia over the same region except for two areas in the right leg one on the peripheral part of the dorsum of the right foot and toes (C) the other in the middle part of the front of the right shin (B)

The diagnosis on admission was posterior inferior cerebellar thrombosis in a patient with advanced granular kidney

COURSE OF ILLNESS

During the four days after admission (to Jan [illegible]) he had attacks of pain in both hands associated with swel[illegible] and redness along the dorsal tendon [illegible] of temperature. (The exact nature of these is obscure.) Pains in various joints also occurred, together with attacks of nose-bleeding. On Feb 4th symptoms of uræmia set in. He had dyspnœa and became very restless, trying to get out of bed. There was also some difficulty of swallowing. These symptoms continued much the same until his death on Feb. 8th. While he was in hospital there was always a considerable amount of albumin in the urine. The blood non-protein nitrogen rose from 91 mg. per 100 c.cm. on Jan. 29th to 108 mg. on Feb. 5th. The blood Wassermann reaction was negative on Jan. 30th The average daily quantity of urine was about 700 c cm. but became less three days before death.

At autopsy on Feb. 9th there was œdema of both lungs, the kidneys showed typical changes of arterio-sclerotic granular kidney; there was marked hypertrophy of the left ventricle; the valves were normal. Except for some calcified mesenteric glands in the region of the appendix there was nothing abnormal in the trunk. There was some atheroma of the arteries at the base of the brain, but no softening.

EXAMINATION OF BRAIN STEM

The brain stem was removed for microscopic examination.

The left vertebral artery was slightly larger than the right. There was a slight narrowing of the right artery at its origin. The two arteries united to form the basilar about 0 5 cm below the border of the pons. The left posterior inferior cerebellar artery was larger than the right The left originated considerably below the olive, the right at a slightly higher level. The left anterior inferior cerebellar artery was large, and arose from the lower part of the middle third of the basilar artery, slightly less than 0 5 cm. above the lower border of the pons The right artery was very small and originated at the same level. The left superior cerebellar was larger than the right. The right artery bifurcated almost immediately, the left 0·5 cm. distant from its origin.

The point of importance, in view of the history and the post-mortem findings, is the small size of the posterior and the comparatively large size of the anterior inferior cerebellar artery on the left side. Apart from this, most of the variations of the vessels on the two sides—for example, the duplication of the superior cerebellar arteries—were within the normal limits as described by Stopford.

Portions of the spinal cord, medulla, pons, mid-brain, and internal capsule were embedded in celloidin, and one small piece of the medulla and pieces of both right and left sides of the optic thalami and post-central cortex in paraffin. The methods used were as follows: (1) Weigert-Pal preparations: some counterstained with alum carmine, others with alcoholic eosin. (2) Nissl's method. (3) Mallory's phosphotungstic acid hæmatoxylin.

In Weigert-Pal preparations it was seen that the degeneration on the left side of the medulla occupied a smaller area than that usually described as being supplied by the posterior inferior cerebellar artery (see Figs. 2 and 3). This degeneration was in the region in which is situated the lateral spinothalamic tract and the tract of Gowers.

Although the degeneration was obvious in specimens examined under a low power or with the naked eye, under the high power it was found not to be complete, as some fibres retained their myelin sheaths. The olivo-cerebellar fibres were very little altered, also the restiform bodies. The olives were normal. The pyramids appeared rather pale, but there was no definite degeneration. There was no obvious alteration in the mesial fillet. The posterior columns appeared well myelinated to their final termination in the medulla.

In Nissl preparations changes were found in the nucleus ambiguus of one side, consisting in a decreased number of cells, as compared with the opposite side, and chromatolysis of the remaining ones. Some of the emerging fibres of the vagus were degenerated. The hypoglossal and nerves were normal. Around some of the vess the medulla there were accumulations of small cells This was not found in other parts of the system, for example in the cerebral cortex The p central cortex appeared normal. No difference observed in the histological appearance of the right left optic thalami, slight post-mortem changes only present.

It was hoped that the examination of the differe levels of the pons and mid-brain would give indication of the path taken by the spinothal fibres in these regions. The degeneration was trac upwards to the junction of the medulla and (see Figs. 5 and 6) At a high level of the pons, from the fact that the mesial fillet appeared rat narrow on both sides, nothing unusual was obser (Fig. 7). In the mid-brain and in the internal cap there was good myelination of fibres.

The fact that the degeneration in the brain stem cou not be traced in a vertical direction from the any higher than the lower part of the pons, emphasi how little is yet known of the exact path taken by th spinothalamic tracts above the level of the medu There are two possible explanations of the fact th the fibres cannot be traced. It is generally assu that the fibres carrying these impulses form a continu path, but this may not be so, and the fibres may interrupted in nuclei in the pons and the impulses by a new tract. An alternative explanation is that fibres of the spinothalamic tracts intermingle with of the mesial fillet so completely that the exact course the degenerated fibres cannot be distinguished

Discussion

Although the general symptomatology of of the posterior inferior cerebellar artery is familiar, yet there are many variations in the various cases reported No doubt, as has shown, the actual area supplied by this varies considerably in different persons. Whilst is sufficient in some cases to explain the pictures, it must not be forgotten that a large of the recorded cases have not been confirmed post-mortem examination, and the actual proof this branch alone was involved is not forthcoming.

As Stopford says: "Most of the recorders of maintain that the symptoms of posterior cerebellar occlusion are extremely constant. careful study of the reported examples nor anatomical distribution supports this"

Before discussing the atypical symptoms in present case it may be said that the initial of vertigo, due to involvement of the restiform and of dysphagia, due to involvement of the nucl ambiguus, could be accounted for by the lesion in the medulla (Fig 3). There is no record of laryngeal examination, but as the nucleus ambig was included in the affected area a vocal cord para had probably occurred.

The horizontal extent of the lesion is some smaller than usual. This corresponds with comparatively small size of the vessel itself. It explains why there was no sensory change on homolateral side of the face, the spinal tract nucleus of the left fifth having escaped owing to restricted area in the horizontal plane of the poste inferior cerebellar supply. Below the level of middle of the restiform bodies the area of degenerat was extremely small. Fig. 2 contrasts very mark with the wide area of degeneration at the same in the medulla in R. M Stewart's case (photom graphs illustrated in Stopford's paper, 1916-17). the present instance the area of degeneration reac its maximum from the level of the middle of estiform bodies to the junction of the medulla and ons (Figs 3, 4, and 5), and diminished very rapidly n the pons A considerable part, if not all, of the egenerated fibres in the pons may be assumed to e due to an ascending degeneration rather than a rimary lesion there In Stewart's case no illustrations re given of the brain stem above the level of the edulla

HE PATHS OF SENSORY CONDUCTION IN THE CORD AND BRAIN STEM

It is generally held that all pain and temperature ensations cross in the cord and travel up it in the spinothalamic tract of the opposite side also that here is a double path for tactile impulses There is, however, some divergence of opinion as to the kind and relative number of tactile impulses carried in the posterior columns It seems probable that the majority of the touch fibres, after travelling upwards for some segments in the posterior columns of the same side, form relays in the grey matter of the posterior horn and cross to the opposite lateral column The lateral path for touch (ventral spinothalamic tract) is distinct in the cord from that for pain and temperature (lateral spinothalamic tract)

According to Head and Thompson the impulses travelling uninterruptedly as far as the medulla in the posterior columns are sensory from muscles joints, and tendons, together with those subserving tactile discrimination These, after relays in the nucleus gracilis and nucleus cuneatus in the medulla, pass upwards in the mesial fillet of the opposite side Foerster, however, regards the posterior columns of the cord as of equal importance with the opposite antero lateral columns in carrying touch and also pressure sensations A reconciliation between these two views may be possible in that there may be variations in different individuals in this respect

The course in the medulla of tactile sensations is not accurately known, but it is generally believed with Déjerine that the ventral spinothalamic tract joins the mesial fillet, while the tract carrying pain and temperature sensations (lateral spinothalamic tract) lies dorso lateral to the inferior olivary nucleus It must not be forgotten that this knowledge has been to some extent based upon a consideration of the dissociated loss of sensation in cases of posterior inferior cerebellar thrombosis, although in many of these cases the actual lesion has not been verified by histological examination

In the pons the lateral spinothalamic tract joins the *mesial fillet and occupies a lateral position* It is obvious, therefore, that a lesion in the pons would be very likely to affect all types of sensation in contrast to the dissociation of sensation that may occur with a lesion in the medulla

Of the sensory impulses entering the trigeminal nerve there is some evidence that tactile impulses follow a central course distinct from that for pain and temperature (Stopford, 1925, Gerard) While

FIG 2

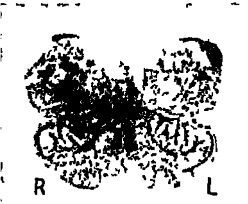


FIG 3

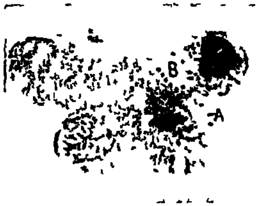


FIG 4

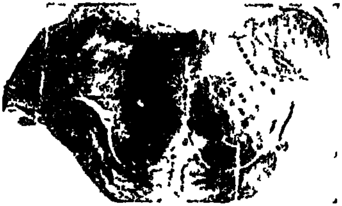


FIG 5

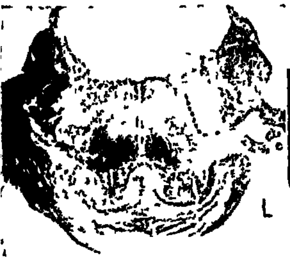


FIG 6

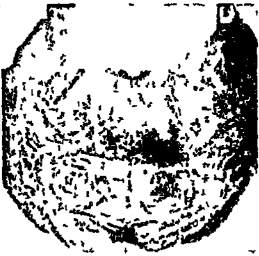
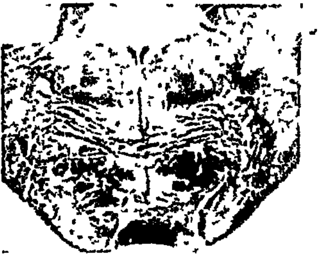


FIG 7



FIGS 2-7 —Weigert Pal preparations of medulla and pons (× about 2)

FIG. 2 —Medulla about the middle of the olivary body Area of degeneration (*within dotted lines*) In this is situated the anterior cerebellar tract

FIG 3 —Medulla Higher level than Fig 2 A and B areas of degeneration (within dotted lines) A contains the anterior cerebellar tract B contains the nucleus ambiguus and corresponds to the area usually described as containing pain and temperature fibres (lateral spinothalamic tract) The mesial fillet is normal Area B *may therefore also* contain touch fibres (ventral spinothalamic tract) in this case

FIG 4 —Junction of medulla and pons Degenerated area (within dotted lines)

FIG 5 —Pons just above junction with medulla There is a partial degeneration mainly within the outlined area.

FIG 6 —Pons Higher level There is some slight degeneration of fibres within the area outlined by dotted lines

FIG 7 —Pons Higher level than (6) There is no difference discernible in the mesial fillet on the two sides and no obvious degeneration elsewhere

the former appear to pass upwards to the sensory nucleus in the pons, the latter pass downwards in the spinal tract of the fifth to end gradually in the spinal nucleus Fibres originating in the latter nucleus cross at intervals to the opposite side, and ascend in part of the lateral spinothalamic tract.

According to some workers, however (Ranson), there is a probability that the central dissociation of impulses of touch, pain, and temperature entering by the trigeminal nerve is not always complete in that some tactile impulses may pass to the spinal nucleus If the former view is correct, a lesion in the medulla would not cause any loss of touch over the face, although it would cause loss of pain and temperature on either side or both sides of the face The second view, that there may be a variation in the amount of dissociation of fifth nerve impulses, would partly explain the partial loss of tactile sensation over the face in the present case.

There is a diversity of opinion about the position of fibres from the three divisions of the trigeminal in the spinal tract and nucleus (Stopford, 1925; Woods; and E. A. Carmichael, personal communication) Still less is known about the arrangement of the fibres carrying these impulses in the secondary neurones in the spinothalamic tract.

SENSORY CHANGES

The sensory changes may be considered under two headings: (1) distribution of sensory loss, and (2) nature of sensory loss.

(1) *Distribution*—The area affected in our case extended over the whole of the right side as high as the lower part of the forehead. This is not the most common type of distribution of sensory loss in cases of posterior inferior cerebellar occlusion. Stopford (1925), in an analysis of 22 recorded cases, divided them according to the distribution of sensory loss into three groups.

> In all cases the loss of sensation on the body and limbs is contralateral, whilst the distribution in the face differs in each. In Type 1 (16 cases) the face distribution is homolateral (sensory loss crossed) In Type 2 (4 cases) the face distribution is contralateral (sensory loss unilateral) In Type 3 (2 cases) the face distribution is bilateral (sensory loss crossed and unilateral).

In the distribution of sensory loss—viz, on the contralateral side of the face, trunk, and limbs—our case belongs to Stopford's Type 2 There is, however, a slight difference in that the area supplied by the ophthalmic division of the fifth had partly escaped, whereas apparently this was not so in the four cases reviewed by Stopford. Obviously the fibres of the secondary neurones carrying these impulses in the spinothalamic tract were not wholly included in the degenerated area There does not seem to be any record of pathological investigations having been made in any of the four cases of Type 2, so that a comparison is not possible.

Nature of sensory loss—In the loss of pain sense and incomplete loss to slighter degrees of temperature over the contralateral side the case coincides with those previously recorded. Indeed it is largely on the constancy of this finding that the recognition and [illegible] of a separate pathway for thermal and [illegible] sensations in the medulla (lateral spino-[illegible] tract) has been based. In this case a lesion was [illegible]und in the medulla occupying the area known as the [illegible]nothalamic tract, as was expected from the clinical [illegible]ta.

In the [illegible] of light touch over the right face, trunk, and limbs c[illegible] case differs from all that we have been able to trace. In almost all the cases of posterior inferior cerebellar occlusion hitherto described, whilst temperature and pain senses have, to varying extents, been lost, tactile sensation has been retained

In only two out of the 22 cases collected by Stopford is there mention of any loss of tactile sensation, and then only in certain very limited areas.

When our patient first presented himself at hospital the history pointed so clearly to thrombosis of a posterior inferior cerebellar artery that the discovery of extensive loss of superficial tactile sensation came as a surprise and led to particular care in its investigation. Repeated examinations were made whilst he was an in-patient, and the possibility of suggestion or of wilful deception was carefully guarded against. He was a man of higher intelligence than the average and a skilled workman who had taken a prominent part in local affairs. He was also quite clear, mentally, at that time; the mental confusion which accompanied the onset of a fatal uræmia did not show itself until Feb 4th—i e., about a week after the findings were recorded. There is thus no doubt about the loss of light touch at the time he came into hospital. Whether this loss occurred at the time of the original attack, or if not when it did occur, it is, unfortunately impossible to be quite sure The information from various sources is somewhat conflicting and difficult to interpret.

> His medical attendant in his original letter wrote "When first I attended him I found him in bed suffering from loss of power on the right side of the body, with difficulty in walking and loss of cutaneous sensation on the *same side, especially loss of heat sense*"
>
> The man himself, describing the original attack, stated that "he felt sick and dizzy and then suddenly lost the use of his right arm and leg He could not feel the ground with his right foot and had loss of sensation in the whole of the right side" He was also quite constant in his statement that "the painful tingling feeling in the right side when exposed to hot or cold, and the pain on shaving the right side of the face, did not begin, or was not noticed until six weeks after the original attack."

On the whole, the impression gained from the history is that sensory loss occurred at the time of the attack and certainly that the "uncomfortable sensations" were not noticed until a few weeks later It would also seem probable that the motor loss on the right side was at first rather greater than the record indicates, and that there was then considerable loss of control (? hemiataxy) of that side, but it is noteworthy that he was able "to walk home without assistance."

A complete histological examination of the central nervous system has been made and shows a definite patch of necrosis in the area supplied by the left posterior inferior cerebellar artery. It is sharply defined, and instead of being larger is actually smaller than usual. No similar changes have been found in any other part of the brain stem, or in the optic thalamus, sufficient to explain the abnormal symptoms and signs.

The case of posterior inferior cerebellar thrombosis recorded by Bury and Stopford resembles ours in that there was also a partial "thalamic" syndrome present. We can quote other instances when the condition was associated with lesion in the brain stem rather than in the optic thalamus.

> A girl of 19 (a patient in the Sheffield Royal Hospital) awoke one night with pain down the left side and loss of use The pain continued after this attack For some weeks also she complained of feeling cold on the left side as high as the shoulder. At the autopsy a tuberculoma, mainly in the right side of the pons, was found a gelatinous cyst being present in the situation of the

esial fillet at one level No lesion was found in the ptic thalamus

Also in two cases of chronic epidemic encephalitis with a artial thalamic syndrome no definite lesion was discovered n the optic thalamus (Cases 2 and 6, Faves and Croll)

t seems possible, therefore, that irritation of certain egenerating fibres in the brain stem may produce "thalamic" syndrome

Persistence of deep pain sensations—Head and Iolmes (*a*) are of the opinion that superficial and eep pain sensations, whilst all grouped in one tract n the cord, run along separate paths in the medulla heir view was confirmed in our case The man, hile unable to feel painful cutaneous stimuli over he right side of the trunk and limbs, suffered great ain from the affected joints of the right arm and g Any movement, active or passive, increased he pain very much

Posture sense intact—Head and Holmes (*b*) described a case of posterior inferior cerebellar thrombosis n which postural recognition was impaired and spatial iscrimination intact They state that the impulses oncerned with postural recognition separate from hose for spatial discrimination at the posterior olumn nuclei They may, therefore be affected ndependently In our case spatial discrimination ould not be investigated owing to the loss of tactile ensation Postural sense was, however, normal, nd seeing that tactile sensation was lost it is clear hat in this man tactile sensation and sense of osition were running through the brain stem in ifferent tracts

Ataxia—Although it is stated in the record that here was slight "ataxia of the right leg," yet there as none in the right arm Seeing that during his tay in hospital this man was bedridden and that very movement of his right leg was made only ith distress owing to the pain in the hip, the true alue of this observation is difficult to assess If it as really present it would be consistent with the indings in Bury and Stopford's case

More important however, is the absence in this ase of any ataxy on the homolateral side where it sually occurs in these cases This, together with the bsence of nystagmus (that is, the scarcity of cerebellar igns), is probably due to the area of the cerebellum upplied exclusively by *the left posterior inferior* erebellar artery being smaller than normal owing o the small size of the vessel This fits in with the maller area of the medullary supply in this case nd the absence of sensory loss on the homolateral ide of the face

Astereognosis—The fact that the man had complete oss of light touch in the right hand and also when he examination was made, a painful swollen wrist, ust be borne in mind in assessing the value of this bservation

Summary

(1) A case of left posterior cerebellar thrombosis is escribed, belonging, as regards distribution of ensory loss to the less common type in which osition is affected entirely on the side opposite to he lesion (2) The loss of tactile sensation as well s those of temperature and pain over the whole f the contralateral side, is in marked contrast to all reviously recorded cases, in which the loss has been dissociated" only (3) The left posterior inferior erebellar artery was smaller than usual the left nterior inferior cerebellar artery was unusually arge (4) An area of degeneration corresponding o the distribution of the left posterior inferior artery as consistent with an occlusion of that vessel three months before death It was smaller than usual (5) No other appreciable area of degeneration was found in any part of the brain stem (6) The degeneration of the spinothalamic tract could only be traced as far as the lower part of the pons (7) It is suggested that in this man tactile impulses from the opposite side travelled through the medulla either with or closely adjacent to those of pain and temperature.

We desire to thank Dr T H Pullar for the clinical history, Miss Croll for assistance with histological preparations, and Mr C Stewart for help with photomicrographs The expenses of the research were defrayed by a grant to one of us (E C E) from the Medical Research Council

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PSYCHOSES IN CASES OF MALARIA FOLLOWING EXHIBITION OF ATEBRIN

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That certain toxic symptoms occasionally follow the exhibition of Atebrin in cases of malaria is now well established Headache epigastric pain of a colicky nature, and yellowing of the skin and sclera, quite unrelated to jaundice, are usually encountered in a small percentage of treated cases Another phenomenon first reported by Dr O I Conoley in a paper (unpublished) read by him in 1933 has been described as "cerebral excitation" This interesting complication was brought into prominence during a local discussion on the toxic effects associated with the use of atebrin admirably opened by Green in December 1933 During that discussion five cases of "cerebral excitation" (Green Hoops and Conoley) and also one case of intense mental depression (Quaife) and one of delusional insanity (Cameron) were described

Early this year Dr D M McSwan presented a short paper (unpublished) that included brief notes of three cases of "cerebral excitation" and two cases of mental confusion, One of the latter cases was transferred to a mental hospital, the second was discharged but about three weeks later was also admitted for mental treatment Since my return from furlough early this year some of my colleagues have kindly communicated to me particulars of further cases that had developed suggestive symptoms The more typical ones are noted below

CASE RECORDS

Case 1 (seen in consultation with Drs W T Quaife, I G Cameron and [illegible] Allen)—A [illegible] year [illegible] planter aged about [illegible] [illegible]

The following day *Plasmodium vivax* was found in blood films—probably, as so frequently happens, the influenza had "lighted up" a latent malarial infection. Atebrin was prescribed and 2 tablets b d (1 tablet = 0 1 gramme) were taken on the 7th and 8th and 3 tablets on the morning of the 9th That evening the patient was very depressed; there was an "impression of impending death" When seen by a doctor he was unable to protrude his tongue or to answer questions: he understood, but could not articulate. When the doctor continued to insist, the tongue was eventually put out and replies were forthcoming, but the patient's manner was curt and gruff, markedly at variance with his usual courteous attitude On admission to hospital he had two hours' sound sleep following a sleeping draught and on waking was apparently normal

When seen by me on the following morning he had quite regained his mental equilibrium. He emphasised his distress of the previous evening, stating that he had felt "as though a large part of his brain was out of action and only a small part was working There had seemed to be so many important things to remember that had just eluded him" His memory for recent and distant events was then excellent, and reflexes were normal. There was no fever, but the pulse-rate, which at rest was 60, accelerated to 75 when the patient was talking The blood pressure (estimated digitally) appeared to be within normal limits

Examination of the urine indicated that atebrin was being freely excreted Quinine was prescribed and five days later he was discharged from hospital He took quinine grs 30 daily for four days, followed by grs 25 for six days The after-history has been kindly communicated to me by Dr Quaife

On June 13th there was a relapse of the malaria, and quinine in the above dosage was taken for ten days On July 10th a further relapse occurred, again the ten-day course of quinine was repeated. Still another relapse occurred on August 1st, when the temperature was raised for three days Quinine was prescribed, but after two days the patient, in desperation, omitted the quinine, substituting atebrin in the following daily doses—3, 3, 3, 2, 2, and 2 tablets There were no ill-effects From August 8th for eight days there was a slight midday rise in temperature (99 6° F) but no parasites were found in the blood films, and up to the present (end of September) no further relapse has occurred Though it is possible that one or more of these "relapses" may have been reinfections, this is not regarded as probable

The notes of this case have been discussed with Dr. J. W. Murdoch, superintendent of the Central Mental Hospital, who is of the opinion that the combination of influenza, in itself a powerful disturber of emotional balance, and malaria may have been enough to bring on symptoms of acute mental unbalance Atebrin may also have been an auxiliary factor

CASE 2 (Notes communicated by Dr. W. R Duff)—A female Tamil labourer, aged 18 years, was admitted to hospital on June 13th after four days fever due to a mixed benign and malignant tertian infection One tablet of atebrin t d s was given from the 14th to the 18th inclusive During the evening of the 19th—i e., 24 hours after the completion of treatment—she behaved as though she was intoxicated, going from bed to bed in the hospital and using lewd and abusive language. Her parents were summoned and in their company she passed a fairly quiet night The following morning she was quite normal and had no recollection of her behaviour of the previous evening.

CASE 3 (Notes communicated by Dr. Duff).—A male Tamil labourer was admitted to hospital on Jan 3rd. The first two blood examinations were negative, but on the 7th *P. vivax* was found Treatment consisted of one tablet of atebrin t d s. for five days, and the patient was discharged on the evening of the 11th He was readmitted on the 22nd: during the previous week he had been very depressed, refusing to talk or to take his food and had been unable to sleep. Under treatment with bromide he slept well on the first night after readmission and made an uneventful recovery.

CASE 4 (Notes communicated by Dr. Duff)—A female European child aged 3½ years had had, in May, 1932, a benign tertian infection that was treated with Euquinine grs 5 with sod. bicarb t d s for two weeks, b.d. for a further two weeks, and then daily for two months There had been a slight rise of temperature on the second day of treatment, after which symptoms had abated and subsequently her health had been good. In November, 1932, there was a relapse (relapse is more probable than reinfection because other cases were not occurring at the time in the vicinity, and she had not spent more than a few hours away from home since the first attack) Atebrin gr ¼ t d s was given for five days and after an interval of three days the course was repeated. Marked yellowing of the skin developed which was noticeable for a fortnight. Three weeks after the termination of these courses there was a second relapse, and atebrin gr ½ t d s was given for seven days Yellowing of the skin again occurred but, in addition, the child developed an unusual and troublesome timidity (quite foreign to her usual nature) that lasted for about a month. A few weeks later symptoms of still another relapse developed A combination of atebrin, Plasmoquine, and Esanophele was employed for treatment without the supervention of any toxic symptoms There has been no further relapse.

CASE 5 (Notes communicated by Drs A. K Co[illegible] Murdoch and W S Leicester)—Early in October a male Singhalese clerk to a rubber plantation contracted malaria (type unknown) and was given 1 tablet of atebrin t.d.s. for five days After three days of treatment he returned to work at his own request Two days later—i e., on the fifth day of treatment—he complained of visual hallucinations and was sent to hospital for observation (Oct 16th). Shortly after admission the patient absconded and a few hours later was arrested for a sexual offence. He was returned to hospital and on the following day he was rational though melancholic, but during the night he became troublesome, talked irrationally, assaulted the watchman, and attempted to abscond. The next day he was abusive and noisy, asserting that he was the Almighty. On the 19th he was sent to a mental hospital for observation. There the patient was found to be mentally [illegible] but otherwise normal, and discharge was possible on the 24th. He returned to his work on the plantation, but for a few days he "saw pictures everywhere"

CASE 6—This case has been briefly recorded by Dr I. G Cameron (see above) It has, however, been possible to obtain more extensive notes from others, through whose hands she also passed (Drs W. H Hart, A G E Smart, W. J. E Phillips, and P. D Johnson). A female Anglo-Malay, aged 30, married, had had malaria some years previously She was admitted to hospital on May [illegible] 1933, with a malignant tertian infection of a few days' duration Quinine in capsules had been taken for [illegible] days but there had been vomiting. From the 10th to the 13th inclusive one tablet of atebrin t d s was given; temperature fell to normal on the 11th On the 13th she was restless, somewhat strange in manner, and talked irrationally. The next day there was little change, but on the 14th, though her manner was still strange, she [illegible] on discharge.

She travelled to another town where she had friends who called in a doctor, thereupon she proceeded to admit herself "so that she could be examined" On admission to a second hospital (May 15th) she was found to be very excitable but not physically ill On the 17th she was irritable, excitable, irrational. and dirty in her habits. During the evening of the 18th she was highly excited, violent, and uncontrollable Three days later there was marked depression followed by another period of violence. On May 24th she was sent to a mental hospital. There was a history of mental derangement about eight years earlier.

AN ANALYSIS

The cases of which sufficient data are available have been subject to analysis: again acknowledgment must be made to Dr McSwan and other co[illegible] for kindly placing their notes at my disposal. Two groups have been differentiated: (1) those exhibiting mild and transient psychoses, and (2) those presenting such serious symptoms that special mental care was necessary Doubtful cases have been excluded—*e g*, *Case 1, where influenza may have been the actuating factor*, and Case 4, *in which the symptoms were perhaps somewhat indefinite*

Mild psychoses—Records are available of eight cases, seven of which were of Tamil and one of Chinese nationality, three were females and five were males, and all were young adults

Four cases were infected with *P vivax*—two with *P falciparum* and two with both *P vivax* and *P falciparum* In the benign tertian sub group the onset of symptoms was noted [1] after 6 tablets (one case), 8 tablets (one case), and 15 tablets (two cases), while the interval between the commencement of treatment and the appearance of symptoms was respectively 1½ days, 2½ days, 5 days [2] and 9 days—*i e*, 4 days after the completion of the course of atebrin The duration of symptoms was ½ day, 1 day, 2 days, and 7 days respectively Both the subtertian cases developed symptoms after 21 tablets, one 7 days after the commencement of treatment, the second 5 days after the completion of a 7 day course The duration of symptoms was ½ day and 1 day. With the "*mixed*" benign and subtertian cases, symptoms appeared after 8 and 15 tablets, 2½ and 6 days after the commencement of a 5-day course The symptoms lasted for 1 and 1½ days, respectively

More serious psychoses—Four cases have been noted *two* were Chinese, one Singhalese, and one Eurasian, three were female and one male and *again all were young adults* Two were infected with *P. vivax*, one with *P falciparum*, and in one case the type of parasite was not diagnosed Both the benign tertian cases developed symptoms after 12 tablets, and the interval from the commencement of treatment was four days In one instance symptoms disappeared and the patient was discharged from hospital, but three weeks later was admitted for mental care The second case [3] was transferred directly from a general to a mental hospital Symptoms appeared in the subtertian case [4] after 9 tablets, three days after the commencement of the course The psychosis had continued for 13 days before the patient was transferred to a mental hospital In the case where the type of infecting parasite is unknown, symptoms developed after 15 tablets, five days after the commencement of treatment Four days later the patient was referred to a mental hospital for observation but was discharged after a stay of a few days

COMMENTARY

These instances of psychoses occurred among several thousand cases that have been treated with atebrin The actual incidence is therefore low and it would appear that predisposition plays an important rôle Of the 12 mild and severe cases analysed two had a history of previous mental derangement and a third had a bad family history But the complication may be attended with such grave consequences that any light dismissal cannot be entertained

There are three possible explanations of the phenomenon (1) cases of mental unbalance following untreated or quinine treated malaria are occasionally reported, (2) the action of atebrin may bring about an increased liberation of malarial "toxins" and (3) atebrin itself may be the toxic agent that determines the attack

(1) Psychical change following malarial infection may result from anæmia, ischæmia, and perhaps "toxæmia" Such symptoms as restlessness, dullness apathy, depression, anxiety, loss of memory, insomnia and hallucinations have been described Sometimes the abnormality is transient but occasionally its duration is prolonged Porot and Gutmann quoted by James, found that a primary state of confusion may become chronic and sometimes passes to catatonic dementia, that cases exhibiting persistent hallucinations may become chronic delirious subjects and that malaria may set in motion a latent constitutional taint of insanity

Anderson is of the opinion that confusion is the commonest single feature of malarial psychosis He states that

> "The commonest form of confusion occurs during the febrile attack . It is a kind of mild delirium without total loss of consciousness and is often accompanied by fleeting hallucinations of sight and hearing The patient talks quietly at intervals to himself, or chatters incoherently and constantly, sometimes getting out of bed and wandering around quietly . A severer form of the same thing is where the patient is rather more confused, agitated or hallucinated He appears to be living in a dream and sometimes becomes violent, argumentative impulsive or ill tempered If addressed in an ordinary voice he may not respond If addressed more energetically he answers perhaps correctly The conduct and talk of a patient while in this state may closely resemble drunkenness Confusion of this kind may last only a few hours or a day The more chronic forms occur generally during the afebrile periods"

In Malaya, though cerebral malaria due to *P falciparum* infection is occasionally seen, psychoses following malaria have been, in the past, a very unusual complication Further, only a small number of cases invalided for "neurasthenia" give a history of malarial fever

(2) When cases are treated with atebrin, trophozoites persist on the average, for a shorter time in the peripheral blood than when treated with quinine though the degree of fever during the first 36 hours of treatment often remains higher in atebrin treated subtertian cases (Green) Early in the therapeutics of atebrin observers noted that, during the first day or two of treatment, cases with heavy infections (particularly of *P falciparum*) not infrequently complained of an intensification of symptoms There is thus indication that in atebrin treated cases the rate of decrease in parasite density is more rapid, and a hypothesis is ventured that a more intense liberation of "toxins" occurs The resulting increased concentration of malarial "toxins" may in some instances be the cause of the psychosis This suggestion is less easily tenable when there has been a low intensity of malarial infection (unless an unusually "toxic" strain is postulated) or when the onset of the psychosis is considerably delayed

(3) With regard to the possible direct action of atebrin on the central nervous system Hecht's experiments are of interest Following lethal doses of atebrin to animals that worker recorded evidence of stimulation of the central nervous system including the cerebrum As Green states however, the therapeutic is far removed from the lethal dose, though perhaps an occasional individual may be unusually *susceptible to this action*

It is thus probable that the psychoses may be caused by an increased liberation of malarial "toxins" or by the direct toxic action of atebrin In either case the risk of these sequelæ could be minimised by caution in the selection of the daily dose.

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[1] This case had a history of previous mental derangement
[2] This case had a history of previous mental derangement
[3] The mother of this patient had been an inmate of a mental hospital
[4] This case had a history of previous mental derangement

SUMMARY

1. Seven cases of psychosis following the exhibition of atebrin to cases of malaria have been collected. Five previously unpublished cases (McSwan) have been cited and five more cases are recorded. These occurred among several thousand cases of malaria treated with atebrin

2. Psychoses may occur in either sex and have occurred in five nationalities Symptoms have developed in benign and subtertian cases and in cases with mixed infections The complication has been noted after a minimum of 6 tablets (1 tablet t d s, i e, 0 3 g daily), a maximum of 21 tablets and an average of 13 tablets The minimum interval between the commencement of treatment and the onset of symptoms was 1½ days, the maximum 12 days (5 days after the completion of the course) and the average 5½ days.

3. The duration of symptoms in eight mild cases varied from ½ to 7 days, with an average of 1½ days Four more severe cases were referred to mental hospitals

4 One mild and one severe case had histories of previous mental breakdown Another severe case had a bad family history

5. Two factors may be involved in the causation The action of atebrin vis à vis the malarial parasite may result in an intense liberation of "toxins" on the other hand, atebrin (in lethal dosage) is known to have a toxic action on the central nervous system.

6 Although the plasmodicidal effect of atebrin in a daily dosage of 0 2 g is less favourable than that obtained with a larger intake, it is suggested that the risk of the development of psychoses would be minimised by caution in the selection of the daily dose.

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SILICOSIS AND MALIGNANT DISEASE

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In a disease such as silicosis, in which chronic irritation of long duration is an outstanding feature, which is characterised by the long-continued presence in the body of a substance capable of slow solution and which in its colloidal or dissolved forms is able to produce toxic, necrotic, and proliferative lesions, an association with malignant disease might well be expected This, however, does not seem to be at all a common finding, if we except the notorious lung cancer of the Schneeberg and Joachimstal miners, which is usually regarded as a special condition local to those districts and the causation of which is, though not understood, commonly attributed to the special nature of the dust inhaled The high arsenical content of the Schneeberg minerals has been suggested as a local factor but, in addition, sulphur, nickel, and cobalt are present. Radium emanation is found in this district, as also in Joachimstal where uranium is mined, and in some quarters opinion has tended towards regarding the irradiation as the exciting agent[1 2 3] Schmorl,[4] in his work upon the Schneeberg cancer, has drawn attention to the coexistence of a "anthraco-chalicosis" in these cases, but, while considering that this may be a factor in the development of bronchial carcinoma, doubts its primary importance, since the lung cancer so frequent at Schneeberg is not found in other districts where pneumoconiosis is common It may be noted that Schmorl found more than one primary growth to be present in the lung in a large proportion of his subjects.

The occurrence of three cases of malignant disease in 14 post-mortem examinations made upon persons suffering from silicosis in East Lancashire since 19 seems worthy of record for the purpose of directing more attention to the possible presence of an ætiological factor in the material causing the pneumoconiosis It is further remarkable that in two of the cases to be cited two independent malignant of different types were present: in one instance and colon were involved and, in the second, bile duct and prostate A case of myeloid leukæmia, in a subject who was suffering from advanced silicosis, is also included since there are many reasons for regarding this disease as an example of malignant neoplasm.

CASE 1 —Female aged about 50 Employed in a soap works engaged in the manufacture of an abrasive soap powder. Both lungs showed well-marked diffuse silicosis with the production in places of areas of dense fibrosis The other organs showed the changes of leukæmia with multiple small ecchymoses under the pericardium and in the cerebral meninges and typical alterations in blood, spleen, and bone-marrow The microscopical picture in the lungs was that of advanced silicosis without tuberculosis.

CASE 2 —Male aged 58 Employed all his life as a stonemason Ceased work five months before death At post-mortem advanced silicosis was present, both lungs being riddled with typical nodules On the right side there was in addition, more advanced and generalised fibrosis with exceedingly dense fibrous thickening of the pleura over the base, this being in places nearly 2 in in thickness Microscopical examination showed the presence of silicosis in the juxta-pulmonary portion of the thickened pleura some necrosis in the deeper portions of the fibrous mass The diaphragm was firmly welded to the under aspect of the lung and adhered also to the upper surface of the right lobe of the liver. In this situation in the organ there was a tumour about the size of an orange A small satellite secondary growth was situated nearby The tumour had the histological characters of a bile-duct carcinoma The subhepatic lymph glands silicotic changes and carcinomatous invasion The lumbar and iliac glands showed silicotic changes only The prostate was enlarged, and on microscopical examination showed an early malignant growth, this was histologically an undifferentiated spheroidal-cell carcinoma of a different type to that in the liver Histological examination of the lungs showed typical silicosis without tuberculosis

CASE 3 —Male aged 57. Stonemason by trade C work a year before death At post-mortem examination typical nodular silicosis was present in both lungs and in addition, a large tuberculous cavity was found in the upper lobe of the left lung A discrete mass of tumour growth, about the size of a walnut, was present in the lower lobe of the right lung and a separate smaller mass in the upper lobe near the root. The bronchial glands showed silicotic and tuberculous disease The upper abdominal lymph glands showed silicosis The other organs call for no comment with the exception of the pelvic colon which showed an early malignant growth limited to the mucosa and about the size of a florin, situated a foot above the anal orifice A large secondary growth was present in the left lobe of the cerebellum practically destroying it Histologically the lung growths were oat-cell carcinomata as was also the secondary growth in the brain The tumour in the colon was a columnar cell carcinoma

CASE 4—Male aged 49 *Stonemason by trade* Had been suffering from chest trouble for six to seven years Admitted to hospital with acute respiratory disease Post mortem examination showed advanced nodular silicosis of the right lung and in addition a tumour about the size of an orange in the hilum of the right lower lobe this had traversed the pleuræ, which was adherent, and invaded the tissues on the right side of the vertebral column The left lung showed a similar silicotic condition to the right and, in addition, early acute lobar pneumonia which was the immediate cause of death The subhepatic and lumbar glands were silicotic The spleen contained multiple nodules of secondary growth The brain showed a large mass of secondary carcinoma on the outer side of the left lobe of the cerebellum and smaller nodules in the head of the right caudate nucleus and in the subcortical white matter of the middle gyrus of the left temporal lobe The structure of the tumour and of its metastases was that of an anaplastic lung carcinoma The lungs did not show tuberculosis

The connexion between the malignant disease and the silicotic condition would seem clearly indicated in the two cases of pulmonary carcinoma and also *in the case of bile duct carcinoma*, where *the tumour originated in an area of liver adherent to the* diaphragm, which in its turn was bound by a greatly thickened pleura to the base of a lung affected with advanced silicosis The existence of a second and *independent tumour in two cases may be variously interpreted, but is at least compatible with the theory of the existence of a diffusible carcinogenic agent* The fact that tuberculosis was only detected in one of these cases would tend to suggest that a degree of resistance to this disease, perhaps unusually well developed, may have permitted an exceptionally prolonged exposure of the tissues to the irritant agent

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IMMUNISATION AGAINST YELLOW FEVER
WITH ATTENUATED NEUROTROPIC VIRUS

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IMMUNISATION against yellow fever is by no means new, for it was attempted more than 40 years ago by Carlos Juan Finlay (1894), though only during the past few years has it been possible to place it on a scientific basis of facts The discovery by Stokes, Bauer and Hudson (1928) that yellow fever can be transmitted to rhesus monkeys was quickly followed by the preparation of vaccines from the tissues of infected animals. Hindle (1928) was the first to prepare such a vaccine by the action of either phenol or formol on an emulsion of liver from rhesus monkeys infected with yellow fever Various vaccines of similar type in which the virus is attenuated by physical or chemical agents were also tested one such being injected into more than 25,000 persons in Brazil during an epidemic in Rio de Janeiro The results were however irregular (Chagas, 1931) The explanation of these uncertain results is to be found in experiments such as those carried out by Davis (1931), who, using a chloroformed vaccine, found that it either failed to immunise monkeys or else infected them with yellow fever Okell (1930) also showed that the antigenic capacity of such vaccines was quickly lost, probably as a result of the death of the virus, in addition, so long as the vaccine contained living virus there was always the possibility that virus might appear in the peripheral circulation with consequent possibility of infection of the mosquito vector Various attempts were also made to vaccinate monkeys with mixtures of virus and immune yellow fever serum but before such a method could be standardised interest turned on the production of a biologically modified yellow fever virus

IMMUNISATION WITH NEUROTROPIC VIRUS

In 1930 Max Theiler discovered that yellow fever could be transmitted to mice by intracerebral inoculation Mice thus inoculated did not develop viscerotropic lesions similar to those found in rhesus monkeys and man, but died from a meningo encephalitis; while after serial passage in mouse brains the virus lost its power to produce viscerotropic lesions on subcutaneous *inoculation* into monkeys, though on intracerebral inoculation it set up a meningoencephalitis The use of this fixed neurotropic virus for immunisation against yellow fever in man appeared to solve many of the difficulties associated with injection of the ordinary or viscerotropic virus

As in the case of the viscerotropic yellow fever virus two methods of immunisation have been employed In the first the inoculation of neurotropic virus, titrated for its potency in mouse brains is combined with the use of immune yellow fever serum also titrated before use, in the second attenuated neurotropic virus has been injected alone The first method was initiated by Sawyer, Kitchen and Lloyd *in* 1931, *since then* Sawyer (1934) has given details of 56 persons immunised in this way in New York It has also been used in London by Findlay (1934) who has tested out various combinations of virus and immune serum, and in Paris by Pettit and Stéfanopoulo (1934), who in place of human immune *serum have employed a high titre immune yellow* fever serum prepared in animals. Just over 400 persons have now been immunised with combinations of neurotropic yellow fever virus and immune serum, the object of the immune serum being to decrease the possibility of reactions and more especially to eliminate the possibility of active virus circulating in the peripheral blood stream

IMMUNISATION WITH ATTENUATED NEUROTROPIC VIRUS

In 1932 Sellards and Laigret *reported on the* vaccination of six persons with dilutions of mouse-fixed living virus Reactions were slight or entirely insignificant In seven other cases subsequently vaccinated in this manner there were in three cases severe reactions after incubation periods of from 12 to 15 days (Laigret 1933) In one there was fever of 4 days' duration with slight albuminuria in the other the illness lasted for from 8 to 10 days with albuminuria, icterus, well marked nervous symptoms and hæmorrhagic sputum Later Laigret (1933 and 1934a) proposed the use of three [illegible] at intervals of 20 days of infected mouse brains which had been attenuated for periods of from 1 to 4 days at a temperature of 20° C In a recent communication (1934 b) he has recorded the results of vaccinating by this method more than 3000 persons, chiefly Europeans, in French West Africa. In about a third of the cases a reaction occurred, commonly after the first inoculation, more rarely after the second, and exceptionally after the third, consisting of fever and occasionally albuminuria. Two persons developed nervous symptoms, one a meningitis, the other a myelitis with transitory paraplegia

EXPERIMENTS ON MONKEYS WITH ATTENUATED VIRUS

The results obtained by Laigret are of great importance, since by the elimination of the use of immune serum the technique of immunisation is greatly simplified. Before, however, applying this method to the vaccination of human beings, experiments were carried out in rhesus monkeys to determine whether virus circulated in the blood stream, more especially after the first inoculation of the infected mouse brain, attenuated by an exposure of 4 days at 20° C. The exact technique by which the mouse brains are attenuated and titrated was carefully followed.

The brains of the infected mice were first attenuated by exposure for 4 days, 2 days, and 1 day to a temperature of 20° C in the same way as is used for the spinal cords of rabid rabbits By this means vaccines of 4 days, 2 days, and 1 day were obtained. The brains were reduced to a dry powder and kept in ampoules deprived of air. Before being used for human inoculation the brains of the three lots of mice are made up in suspensions of 1 in 100, 1 in 1000, and 1 in 10,000, and inoculated into the brains of mice. None of the mice inoculated with dilutions of the 4 days' brains should die, but with dilutions of the 2 days' brains, mice inoculated with the dilution 1 in 100 die, while with the 1 day's brains the mice inoculated with the dilution 1 in 100 and 1 in 1000 die, but not those inoculated with the dilution 1 in 10,000. The mice are observed for 15 days The first inoculation into man consists of 1 c.cm of a 1 in 100 suspension of the 4 days' brain, 20 days later 1 c cm. of a 1 in 100 suspension of the 2 days' brain is injected, and after another interval of 20 days 1 c.cm. of a 1 in 100 suspension of the 1 day's brain

It was found that by following the above technique it was not difficult to obtain brains which gave the correct degree of attenuation when the inoculated mice were observed for 15 days, though it was frequently noted that when the mice were kept under observation for as long as 28 days occasional mice died with encephalitis, even after inoculation with brains attenuated for four days, in from 16 to 23 days. This prolonged incubation period in mice has often been observed where the inoculum contains small amounts of living virus.

Having obtained mouse brains of the correct degree of attenuation 6 rhesus monkeys, weighing between 2½ and 3 kg., were inoculated subcutaneously with 1 c cm of a 1 in 100 dilution of the 4 days' vaccine, each monkey receiving a different mouse brain The temperatures of the monkeys were recorded and, in order to test for the presence of virus in the blood, at intervals of 48 hours blood was removed from the heart and inoculated intracerebrally into mice At the end of 20 days the monkeys' blood was tested for the presence of immune bodies, while the second injection—1 c cm of a 1 in 100 dilution of the 2 days' vaccine—was injected subcutaneously. The results are shown in the following Table.

It will be seen that monkeys 1, 2, 4, and 5 showed the presence of virus in the blood in from 2 to 8 days after inoculation: these monkeys had developed immunity 20 days after inoculation, and on injection with mouse brains attenuated for 2 days they did not again show circulating virus in the blood stream. Monkey 1 had a febrile reaction on the fifth, sixth, and seventh days after inoculation, monkey 2 on the fifth and sixth days, the others had no significant rise in temperature. Monkeys 3 and 6, which failed to show the presence of virus in the blood stream, also failed to develop immunity On receiving the second inoculation, which as shown by its action on mice contains living virus, both monkeys 3 and 6 showed the presence of virus in the blood stream, and subsequently became immune.

Monkey.	Presence of virus in peripheral blood stream after inoculation (as shown by intracerebral inoculation of mice).									Immunity 20 days after inoculation	
	Days										
	2	4	6	8	10	12	14	16	18		
1	+	+	+	—	—	—	—	—	—	+	-
2	—	+	+	—	—	—	—	—	—	+	+
3	—	—	—	—	—	—	—	—	—	—	-
4	+	+	+	+	—	—	—	—	—	+	+
5	—	+	+	—	—	—	—	—	—	+	-
6	—	—	—	—	—	—	—	—	—	—	-

Since it might be argued that the first injection of 1 c cm. of 4 days' vaccine was the dose for an adult human being and not for a rhesus monkey, 4 further monkeys were inoculated subcutaneously with 0 5 c cm of the 4 days' vaccine. The results were the same, however; in three monkeys virus was present in the blood stream by the fourth day, and in one it failed to appear in the blood. This monkey was not immune at the end of 20 days. Monkey 8, which showed the presence of virus 4 and 6 but not 8 days after inoculation, is of particular interest, for 12 days after injection it developed weakness of the hind limbs and grinding of the teeth, 24 hours later it was killed with encephalitis and virus was found in large quantities in the brain

From these experiments on monkeys it is seen that the development of immunity is correlated with the presence of virus circulating in the blood stream, for when no virus circulates immunity fails to develop. These results with brains attenuated by exposure at 20° C are thus entirely similar to those obtained by attempting to attenuate the neurotropic virus by exposure to a pointolite in the presence of methylene blue (Findlay, 1934), where also complete loss of pathogenicity is accompanied by a complete loss of antigenic capacity. The experiments on monkeys thus suggest that in human beings inoculated with virus attenuated by exposure at 20° C development of immunity is correlated with circulation of virus in the blood.

DISCUSSION

The presence of active neurotropic yellow fever virus circulating in the blood stream during the course of immunisation renders the individual concerned a potential danger both to himself and to the community if any of the known mosquito vectors of yellow fever are present.

Although Mathis, Laigret, and Durieux (1934) state that their mass experiments in West Africa were not followed by any epidemic outbreak, this does not alter the fact that, as shown by the experiments of Davis, Lloyd, and Frobisher (1932), and of Roubaud and Stéfanopoulo (1933), *Aëdes ægypti* is capable of taking up the neurotropic virus from the blood stream of monkeys and retransmitting it to ther animals Davis (1934) has recently shown that at each bite the stegomyia mosquito injects approximately 100 times the infective dose for the mouse

The chief personal danger to which a person with active circulating neurotropic virus is exposed is that the barrier between the blood stream and the brain may be broken down and the central nervous system may be invaded by the virus This appears to have occurred in two cases reported by Laigret (1934 b), it certainly occurred in one of the monkeys inoculated in the course of the present investigation Davis, Lloyd, and Frobisher (1932) also record the case of a monkey which developed encephalitis following the bite of a mosquito infected with the neurotropic virus. Occasionally also mice and guinea pigs inoculated intraperitoneally with neurotropic virus have developed encephalitis in the absence of any known cerebral trauma The barriers between the blood and the brain cannot therefore be regarded as always impermeable to the neurotropic yellow fever virus

A second danger which cannot be entirely excluded is that the neurotropic strain may suddenly revert to the viscerotropic virus In man, following the inoculation of neurotropic virus, leucopenia and bradycardia are common, while symptoms such as albuminuria and jaundice have also been recorded, and in hedgehogs Findlay and Clarke (1934) have shown that subcutaneous inoculation of neurotropic virus is capable of producing lesions in the liver and stomach similar though rather less in degree than those produced by the viscerotropic virus The neurotropic virus should in fact be regarded as pantropic rather than strictly neurotropic

CONCLUSIONS

(1) Experiments are recorded on the immunisation of rhesus monkeys against yellow fever by Laigret's method, which involves attenuation of the virus by exposure for varying periods at 20° C (2) The development of immunity appears to be correlated with the circulation of living neurotropic virus in the peripheral blood stream (3) One of the monkeys developed encephalitis after an injection of supposedly attenuated virus (4) In view of the danger attendant on the circulation of active neurotropic virus in the blood stream this method is not recommended for human immunisation

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THE HÆMOSTATIC POSSIBILITIES OF SNAKE-VENOM

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DURING an investigation by one of us (R G M) of normal and hæmophilic blood coagulation a suggestion was made by Prof H Hartridge to the effect that the coagulants known to exist in certain snake-venoms might be of value in the treatment of hæmophilic hæmorrhage Acting on this suggestion we proceeded to examine the action of various snake-venoms on hæmophilic blood and to study them with a view to the production of a hæmostatic agent The work, of which this is a preliminary report, was carried out mainly at St Bartholomew's Hospital and partly in the laboratories of the Zoological Society of London

Considerable work has previously been done on the coagulant action of snake venoms on normal blood in vivo and on citrated plasma in vitro But so far as we are aware the action on hæmophilic blood has not previously been studied In 1893 C J Martin[1] found that the venoms of certain snakes caused intravascular clotting In 1903 G Lamb[2] discovered that certain other venoms clotted citrated plasma This work was followed up by further investigations by the same workers and by Sir T R Fraser J Mellanby (1905), and others In 1933 H F Holden[3] claims to have eliminated the coagulant from the venom of certain Australian snakes by adsorption on to barium carbonate, but he does not appear to have isolated it in an active form

TECHNIQUE

The materials needing description which were used in our work are (1) blood from hæmophilic patients, (2) dried snake venoms, and (3) an apparatus to measure accurately the coagulation times of the blood

The *hæmophilic blood* was obtained from the veins of three donors In each case the diagnosis was fully established by family and personal histories and blood examinations over periods of several months Their coagulation times varied between 17 and 33 minutes (normal = 3½ minutes by the method used)

The *snake venoms* employed were obtained from nearly all the poisonous snakes available in the collection of the Zoological Society of London The method of collecting venom was that commonly employed in antivenene institutes The snakes were caused to bite through an oiled-silk membrane stretched over a glass container After the initial flow of venom into the glass the poison glands and ducts of the snakes were manipulated to extract the residue In this way the parotid secretion was collected in a pure state without admixture with other buccal secretion The venom so collected was spread on glass plates and dried either spontaneously or over calcium chloride in a desiccator The dried venom was then stored in the dark in glass tubes hermetically sealed with paraffin wax

A mechanical coagulometer previously described by one of us (R G M) was employed This will be more fully described in a later paper In it the moment at which clotting occurs is determined by the failure of a [illegible] silver striker to move through a [illegible] in a glass tube The temperature is controlled thermostatically The time taken by the blood to clot is measured by a stop watch

A POTENT COAGULANT OF HÆMOPHILIC BLOOD

The first work was to classify all the available venoms as coagulants or anticoagulants, and to measure the relative potency of the former This was done by adding to ten drops of hæmophilic blood one drop of a 1 · 1000 solution of the venoms in the coagulometer and comparing the coagulation times so obtained with that of the untreated blood. It was found that neither coagulant nor anticoagulant action was common to any large zoological group of snakes The only large genus in which the venoms were consistently coagulant was vipera In allied genera the venoms of some quite nearly related species were opposite in action In many cases the effect was slight and could probably not have been detected with normal blood

The most striking results were obtained with the venom of an Indian snake, *Vipera russellii*. This, in the concentration stated above, clotted hæmophilic blood in 17 seconds when blood from the same patient clotted spontaneously in 35 minutes It was found, moreover, that, once begun, the process of fibrin formation was completed very rapidly The clot produced was tough and elastic, in marked contradistinction to the soft, slowly forming, ineffective clot characteristic of hæmophilia—a point of some clinical importance

Flexner has stated[4] that this venom does not produce true fibrin clots, but only agglutination of corpuscles It was found, however, that clear hæmophilic plasma coagulated with venom as firmly and rapidly as did the whole blood It was therefore decided, for the time being, to continue the work with the venom of *Vipera russellii*

As the work proceeded it became evident that the coagulant action of venoms on citrated blood was not a true index to their action on whole blood Thus many venoms were found to clot citrated blood more rapidly than did Russell's viper venom, though their action was much slower on hæmophilic blood As a coagulant of hæmophilic blood, Russell's viper venom was found to be by far the most powerful agent in our experience

The effect of dilutions of the venom was then studied. The general conclusions from these experiments were that a dilution of 1 10,000, or even 1 100,000, provided a clotting time sufficiently short for practical purposes—e g , about 60 seconds The coagulant action was traceable in very much lower concentrations than this It was not entirely lost till after a dilution of $1 . 10^{18}$ was reached

Since Russell's viper venom contains powerful toxins apart from the coagulant it would obviously be desirable to isolate the latter were this practicable. So far we have not been successful in achieving this isolation. It was found, however, that the unwanted toxins were negligible when the venom was used in the dilution and conditions specified The local effects were investigated by one of us (R G M) by means of experiments on rabbits, guinea-pigs, and mice These showed conclusively that injection of subminimal lethal doses of venom solution into the skin and subcutaneous tissues resulted in no hæmorrhages, œdema, ulcerations, or destruction of tissues, even in the concentration of 1 in 1000 The application of 1 per cent venom solution to wounds did not lead to suppuration, or to delay in healing as compared with control animals No damage to liver or kidneys of the animals could be found subsequently. It seems, in fact, that the unwanted toxins had been diluted out of practical importance The human minimum lethal dose as estimated by Acton and Knowles[5] is 42 mg., and this would only be contained in several litres of the 1 · 100,000 solution

STABILITY AND STERILITY

The *stability* of the coagulant was next considered. It was found that, generally speaking, it conforms to the known facts of the stability of viperine venom as a whole. That is to say, in the dry state its potency remains unimpaired at least for months, but in solution it deteriorates fairly rapidly The deterioration is more rapid in weak solutions than in strong ones, and at high temperatures than at low ones It is rapidly destroyed in the presence of carbon dioxide, a fact which has not, so far as we are aware, been hitherto observed. Even stored at 0° C solutions are not entirely stable

The effects of varying pH solutions and of possible preservatives in the diluent are being studied. No preservatives have been found effective with the possible exception of 0 5 per cent. phenol This was surprising in view of C. J. Martin's finding that venom was destroyed in solutions of phenol in 48 hours ; but in any case the preservative action was too slight to be of practical value

The question of the *sterility* of the venom solution is of some practical importance, since it was found, at least in the concentrations employed, that the venom had no inhibitory action on the growth of bacteria and moulds Sterilisation by heat or by strong antiseptics destroyed its coagulant property Passage through a Berkefeld filter No. 12 b V, however, did not appreciably influence its activity, and this method of sterilisation was adopted

CLINICAL RESULTS

Not enough data have accumulated yet to allow of definite therapeutic claims, but such clinical trials as have been made are encouraging

The cases which have received treatment by venom solutions will be described fully in subsequent papers It is sufficient here to summarise them in three groups.

(1) In patients with normal blood the venom has been used successfully some 20 times as a hæmostatic application following dental extraction and tonsillectomy, and in two cases during abdominal operations to control capillary oozing.

(2) The venom has been used with success to check hæmorrhage following dental extraction in three subjects with a hæmorrhagic diathesis of which no definite diagnosis was made

(3) Finally, in genuine hæmophilic subjects it has been used most effectively following dental extractions (two cases), to control epistaxis (one case), and to control hæmorrhage from wounds (one case). In the cases of dental extraction an operation was deliberately performed which would have been considered highly dangerous in view of the patients' prolonged coagulation times and the absence of a hæmostatic

In all these cases complete hæmostasis was secured almost immediately by the local application of sterile 1 10,000 venom solution In none of these was there any ill-effect attributable to its use

CONCLUSIONS

1 The venom of *Vipera russellii* contains a coagulant which clots both normal and hæmophilic blood very rapidly in high dilutions in vitro.

2 The solutions as prepared and described have been shown to have no toxic effects when applied locally.

3 Sterile solutions can be prepared.

4 In dental and general surgery the solution has been applied with apparent success as a hæmostatic

o both normal and hæmophilic subjects without l effects

We wish to acknowledge our gratitude to Prof H Kettle for his interest and encouragement, nd to many other members of the staff of St Bartho omew's Hospital for invaluable assistance and dvice

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Clinical and Laboratory Notes

ABORTUS FEVER IN A YOUNG CHILD

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ABORTUS fever is rare in this country According o Hume[1] only 15 cases were recorded in England and Vales in the three years previous to 1930 The isease is more frequently recognised in adults but England two cases have been recorded in children ne in a boy of 3½ years and another in an infant of months[2]

On June 2nd, 1934, a child, aged 2½ years, was admitted o Hope Hospital, Salford with a history of drowsiness nd repeated vomiting of 24 hours' duration Her previous ealth had been good On admission she was very listless nd toxic looking the temperature was 101 4° F and the ulse rate 144 per minute A few purpuric spots, each bout the size of a large pin head, were scattered evenly ver the trunk and thighs Routine examination of the arious body systems revealed no abnormality There was ight stiffness of the neck and slight congestion of the auces The spleen was not palpable Routine blood ulture and examination of the cerebro-spinal fluid were egative Within a few days after admission the rash dis ppeared Sixteen days after admission agglutination tests ere carried out for the enteric group and abortus fever, nd the test for *Brucella abortus* was found to be positive n dilutions of 1 30 to 1 160 On June 4th the white cell ount was 28,750 per c mm (polymorphs 80 per cent ymphocytes 11 per cent, and large mononuclears 9 per ent)

The child was in hospital for two months and was then aken home by her parents While in hospital she was xtremely fretful, her appetite was poor, and she lost eight The temperature for the first three or four weeks as irregular and intermittent, usually with an afternoon ise to 103° or 105° F During the night the temperature ll to normal or subnormal and there was considerable weating Towards the end of the child's stay in hospital e daily range of temperature had fallen considerably nd was between 97° and 99° F Shortly before leaving ospital a second test showed no agglutination against *r abortus* Treatment was symptomatic Crookes ollosol iodine (♏ 30 thrice daily by mouth) appeared to ave some effect in reducing the temperature

Some four weeks later she reported as an out patient nd was found to be in good health and gaining in weight t the rate of about 1 lb per week Two other children ged 6 and 9, belonging to the same family were also ealthy and well

An investigation by the medical officer of health or Salford revealed that about three years ago there as an extensive outbreak of contagious abortion among the cattle on the farm from which the child was obtaining milk Some of the cattle in the herd at that time still remained in the herd and samples of blood from two of the cows were found to give a positive reaction to *Br abortus* I am indebted to Dr H Osborne, the medical officer of health, for this information, and also to Dr J Dudgeon Giles medical superintendent of Hope Hospital, for permission to publish this report

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[1] Hume, W E Newcastle Med Jour 1929 [illegible]
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GANGRENE OF THE LEFT ARM

DUE TO OCCLUSION OF THE SUBCLAVIAN ARTERY IN THE WALL OF AN OLD TUBERCULOUS CAVITY

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IN the following case gangrene of an upper limb occurred as a complication of chronic pulmonary tuberculosis I have been unable to find any similar case on record

The patient, a man aged 53 gave a history of having had " pneumonia " nine years before admission and seven years before admission bilateral pulmonary tuberculosis was diagnosed He was transferred to Wrightington Hospital from Withnell Pulmonary Hospital where he had had six years' treatment (the patient had no home and his sputum was constantly positive) He had complained of vague pains in the left arm and hand for twelve months, and during the last three months there was definite tingling and blanching of the fingers at this time there was no pulsation to be felt in the brachial or radial arteries A month before admission the fingers became discoloured

On admission the fingers and thumb of the left hand were black at the tips and the dorsum of the hand was mottled blue The wrist was white and swollen with several large bullæ containing serum The forearm was œdematous There was no swelling of the upper arm Pulsation was absent in the radial and brachial arteries The urine contained albumin but no sugar The Wassermann reaction was negative The sputum was profuse and purulent and contained numerous tubercle bacilli

Physical examination of the chest revealed extensive disease of both lungs with crepitations all over both sides —loudest on the left There were no physical signs of a cavity at the right apex. The skiagram revealed a scoliosis of the whole dorsal spine with the convexity to the left, and the heart as a result was situated completely to the right of the spine There was infiltration of all three lobes on the right side of a fine fibrotic character On the left side there was a large cavity at the apex and below this there was medium mottling extending to the middle zone

Two days after admission the arm was amputated at the middle third by the circular method There was practically no bleeding from the stump except a very small amount of oozing in the substance of the triceps muscle The brachial artery was blocked by a fairly recent clot which was not adherent to the vessel wall Pieces of the brachial and radial arteries removed at operation were sent for section to Prof S L Baker of Manchester University, and he reported No evidence of endarteritis the lumen of the vessel was filled with blood clot which had not yet begun to organise There was a well marked periarteritis with thickened connective tissue containing numerous newly developed vascular spaces and capillaries The general appearance suggested that the periarteritis was of some standing

For a week after operation the wound appeared to be healing by first intention but at the end of a fortnight there was [illegible] discharge [illegible] of the stump [illegible] was painful The patient's fever [illegible] gangrene supervened in the stump and there was [illegible] of the extremities He died four weeks after operation

Post-mortem findings The body was [illegible] emaciated The amputation wound had [illegible] exposing a raw black area, and there was black discoloration extending 3 inches up the arm. Both lungs were densely adherent to the pleura, and were freed with difficulty. They were removed en masse together with the heart. On dissection the right lung contained numerous areas of tubercle scattered throughout, there was a large caseous area at the apex but there were no signs of cavitation. The left lung revealed a large cavity at the apex about 3 inches by 2½ inches in diameter, with thick fibrous walls. The left subclavian artery was found deeply embedded in the upper and inner wall of the cavity for 1½ inches commencing at its origin. On opening up the vessel a dense organised adherent clot of old standing was found in the lumen The artery distal to the part embedded in the cavity wall contained a recent clot, but it was not adherent to the vessel wall. There were numerous areas of tubercle scattered throughout the rest of the lung. No other evidence of tuberculosis was found in the other organs of the body

Blumer[1] states that the lack of symptoms in obstruction of the large branches of the arches of the aorta is often a striking feature; in this case there was a nine months' history of vague pains in the arm and hand before any very definite symptoms appeared. They also are of opinion that gangrene is usually absent, and if present it is stated to indicate that the process is a luetic one; the Wassermann reaction was negative in this case.

I should like to thank Dr M. MacPhee, medical superintendent of Withnell Pulmonary Hospital, for notes and information of the man's condition before admission to Wrightington, and Prof S L Baker for permission to publish his report of the histological findings at operation.

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[1] Blumer, G. In Osler and McCrae's Modern Medicine, London, 1927, vol iv., p 934

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF UROLOGY

In his presidential address to this section on Oct. 25th, Mr. J. B. Macalpine considered the

Musculature of the Bladder Neck

of the male in health and disease. He began by drawing attention to the fact that two muscles, separated by an inch or more, exist at the bladder neck, both functioning as sphincters, the one an unstriped, involuntary muscle, receiving its nerve-supply from the sympathetic and parasympathetic; the other a striped muscle, under the control of the will and innervated by a spinal nerve Do these two strangely different muscles play identical parts, and if so, why so strangely dissimilar? The posterior urethra is the point of meeting between the urinary and the genital streams and it is to this confluence that we owe the complication of a dual musculature If both muscles were open when semen was being discharged from the ejaculatory ducts, that secretion would be at liberty to escape not only to the exterior but also into the bladder, whilst any urine in the bladder would escape. If both sphincters were closed, sperm would be imprisoned between them. In health, with the onset of penile erection the internal sphincter goes into spasm and imprisons the bladder contents, forbidding their interference with the sexual act.

Passing to prostatic hypertrophy it was shown that the characteristic thing is for the internal sphincter to be displaced so that it comes to lie half an inch or more down the dorsal aspect of the middle lobe. The growing adenoma worms itself through the muscle ring so that a large proportion of the gland projects within the vesical cavity. The internal sphincter is thus greatly overstretched and in its new situation can neither contract nor dilate

At operation the enucleating finger passes between the adenoma and the sphincter. The site of the sphincter is always discernible, if a careful examination is made, as a shallow groove on the surface of the removed adenoma which often shows a thin ribbon of adhering muscle But in numerous instances there is a quite well-marked furrow which shows that the pressure of the muscle is not a negligible force and that it evidently plays a material rôle in pressing together the various lobes of the abnormal gland and probably thus helps to obstruct the outflow of urine Is it a revolt of this misused muscle which determines that final acute retention which may set in so dramatically? In the modern operation the internal sphincter is purposely divided at its posterior part in order to prevent a stricture forming Some time after healing is complete, cystoscopy will show the shrunken adenoma cavity communicating freely with the bladder The internal sphincter is no longer competent and bladder continence depends entirely on the external The importance of the external sphincter was illustrated by two cases in which continence failed. In the first a rectal carcinoma had previously been removed and a colostomy functioned in the left iliac fossa. Prostatectomy was performed and convalescence was smooth, but total incontinence resulted It appears certain that during the operation on the rectum, damage to the external sphincter or its nerve-supply had resulted in its permanent damage Between the rectal operation and the prostatectomy the patient had relied on the internal sphincter only, and that muscle was destroyed by the prostatectomy. In the second case the external sphincter was destroyed by perineal tuberculosis Years elapsed between the time when each of these men lost his external sphincter and the onset of prostatic obstruction, but neither was conscious of any alteration in the act of micturition which remained fully under control. In other words two patients whose external sphincters were known to be paralysed had complete voluntary control by means of their internal sphincters—muscles composed of plain fibres, the voluntary control of which is often questioned. The discovery by McCrea of striated muscle in the internal sphincter is thus significant. Now the prostatectomised patient (who has lost his internal sphincter) similarly has complete voluntary control, so that it would appear to be a matter of indifference, so far as micturition is concerned, to have either of the sphincters out of action, so long as the other retains its normal capacity In a large number of prostatectomies these are the only two cases in which the patient has been rendered incontinent, and in each an extraneous cause was responsible. This speaks volumes for the reliability of the external sphincter

How does prostatectomy affect sexual potency? The injury to the internal sphincter will destroy bladder closure in many cases and will allow sperm to regurgitate into that viscus instead of diverting it to the exterior. A prostatic of 50 was concerned to know the effect of operation on his sexual capacity. During the operation pains were taken to avoid injury to his internal sphincter Several months after he reported that at first coitus produced an orgasm but no emission Later, however, normal ejaculation occurred These two phases correspond to stages in the recovery of his internal sphincter It appears that following prostatectomy two conditions of the internal sphincter may occur, the one in which the sphincter is intact, when it remains capable of performing its sexual function and probably also its function as a sphincter of the bladder, the other in which the muscle has been permanently injured

In prostatic enlargement the *trigonal* muscle hypertrophies to overcome obstruction But what is its relationship to the growing adenoma? The insertion of this muscle was shown to be in the neighbourhood of the verumontanum The two muscles of Bell normally converge on the uvula vesicæ under which lie Albarran's glands When hypertrophy affects these glands they push up between, beneath, and around the Y-shaped convergence of the two muscles of Bell Microscopic sections of the cleft between the middle and lateral lobes show strands of longitudinally running muscle which are the direct continuations of the bundles in the bars of Bell These muscles lie between the middle and lateral lobes and the resistance they put up to the growth of the adenoma is the cause of the furrows which they occupy and also of the prostatic division into the lateral and middle lobes which has never previously been satisfactorily explained

An early and important sign of central nervous disease is weakness or paralysis of the internal sphincter, producing a funnel shaped posterior urethra which can be seen cystoscopically Amongst 21 tabetics and general paralytics examined recently the phenomenon was positive in all except two Repeatedly it was observed that a minor degree of funnel neck would develop into a major if the bladder were more fully distended To obtain a good view of the colliculus is the best test of the sign, and to do so the ocular end of the cystoscope must be sharply depressed Otherwise the condition will be overlooked In addition to these 21 known sufferers from central nervous disease, a watch has been kept upon the ordinary cystoscopic material One hundred consecutive males produced 12 examples of a funnel neck It is relatively easy to account for the phenomenon when discovered in a known paralytic, but when encountered unexpectedly it presents greater difficulties in interpretation

Some examples are unexplained, so that the question must arise whether the sign is not sometimes to be found in completely healthy men The internal sphincter therefore bears the brunt of the paralysis in nervous dysuria and the external sphincter probably retains its function comparatively well The former, an involuntary muscle, is probably mainly responsible in health for continence during sleep the external sphincter relaxing like other voluntary muscles Its paralysis therefore may play a part in the nocturnal incontinence of tabes With most male tabetics sexual capacity deteriorates It remains intact, however with a proportion Two of the tabetics are quite definite that orgasm without emission occurred routinely in their recent experience the flow of semen undoubtedly taking place into the patient's own bladder as a consequence of the breakdown of nature's barrier the internal sphincter On the other hand, two patients with funnel necks of high grade quite unexpectedly reported normal ejaculation.

The case histories of two men whose internal sphincters were destroyed by gunshot wounds were detailed In each case coitus was normal except that ejaculation failed and in each intercourse could be safely undertaken even when the bladder contained urine

In another pair of cases reported by Brenner, a gunshot wound of the spine resulted in an "*automatic* bladder" The significant fact in these two cases was that an erection was accompanied by trickling of urine Should *ejaculation occur, the outflow of urine* became more rapid This phenomenon shows that with the onset of erection the external sphincter weakens and that the dilatation becomes more pronounced during emission, events which are not cause for surprise On the other hand, it is evident from a study of the behaviour of the bladder sphincters in my own groups of cases where the internal sphincter alone was damaged, that the external sphincter does not relax sufficiently to allow sperm to pass unless the internal sphincter is tightly contracted, and it seems justifiable therefore to assume that a certain pressure must be developed in the posterior urethra before the signal is given for the external sphincter to yield and permit emission If from any cause the internal sphincter fails to play its part regurgitation into the bladder takes *place Moreover, it appears* that the external sphincter does not in these circumstances open up at all, for, as shown, coitus can be effected even in the presence of urine in the bladder which indicates clearly that the factors causing yielding of the external sphincter were missing

Further illustration of the association between erection and closure of the internal sphincter may be found in the observation that certain patients with bladder stones suffer from priapism Here again we meet the association between spasm of the internal sphincter, provoked by the irritation of the stone, and erection of the penis, an alliance which has its physiological basis in the necessity for bladder closure during coitus When the sexual act is effective but no ejaculation eventuates, the patients invariably express the view that the orgasm is completely normal and satisfactory This fact suggests that the orgasm is not dependent on the distension of the posterior urethra or the propulsion of spermatic fluids along the urethra By exclusion, therefore, we are led to the view that it results from stimulation of that sensitive structure, the verumontanum, by the emerging semen

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LIVERPOOL MEDICAL INSTITUTION

At a meeting held on Oct 18th, with Dr J MURRAY BLIGH, the president, in the chair, Dr DONALD OWEN read a paper on

Manganese Poisoning

The history of chronic poisoning with manganese dated back, he said to 1837, when Couper described five cases Only 15 cases had been recorded up to 1913, and these were found in France, Germany, and the United States Edsall in 1919 reported further cases but the first publication in this country appeared in 1922 by J P Charles of Bristol The pathology was practically unknown, animal experimentation had given little help, but Findlay was able to produce cirrhosis of the liver in rabbits and Mella changes in the corpus striatum and globus pallidus of monkeys following administration of manganese chloride In June and July 1934, the speaker saw at the Bootle General Hospital four cases of manganese poisoning in men working in the same [illegible] works Symptoms in one case appeared after only eight months exposure in the other three after 2½ [illegible], and 8 years respectively The clinical picture in each case was indistinguishable from that of chronic post-encephalitic parkinsonism but the extent of involvement of the extrapyramidal system varied Signs and symptoms of hepatic cirrhosis were not found. Treatment with liver feeding, as suggested by Charles, was tried but without improvement, removal from the dusty parts of the works was essential in all cases showing symptoms of poisoning As in other industrial diseases, individual susceptibility was a factor.

Prof. **Henry Cohen** said that in four established cases which he had seen from the same factory no improvement seemed to have occurred although contact with manganese had ceased for one to two years In these patients the general health had suffered no impairment; they may indeed survive for years in a more or less crippled state Not infrequently a curious slapping gait is present with a tendency to walk on the metatarso-phalangeal joints Whilst in parkinsonism some disturbance of ocular movement, especially diminution of convergence accommodation response, is almost invariable, eye changes were absent in these cases He called attention to a recent autopsy reported by Canavan, Cobb, and Drinker (Arch Neur. and Psychiat, September, 1934) on a case of chronic manganese poisoning in a man of 69 who died 14 years after the onset of symptoms; whilst diffuse cellular changes were found in the cerebral cortex and cerebellum, the significant pathological process was in the basal ganglia which showed shrinkage associated with degeneration of nerve-cells, satellitosis, and gliosis

Borderline Dental Problems

Mr. **Robert Kennon** read a paper on a few dental problems of interest to the medical profession. Whereas caries was often considered to be the result of starch and sugary food, the modern child was, he said, indulging in far more sweets than formerly in order to combat acidosis Serious infection from the teeth was rare in childhood, apart from concurrent infectious fevers when the mouth should be watched carefully for development of caries In adults, acute pulpitis might lead to extensive osteomyelitis More frequently the apical abscess had led to decalcification of bone over a long period of time, so that cortical sequestra were more common. The fact that the molar roots were beneath the mylohyoid ridge meant the early approach of abscesses to the neck, and these should be opened before extensive cellulitis had developed In dental cysts the whole sac should be removed In trismus gags were necessary, and relief might be obtained by a spring over the head, pressing lightly upon the infected joint Ill-fitting dentures were a source of leukoplakia and carcinoma. The life of a denture should not, he thought, be more than five years

Mr J. A **Woods** agreed with Mr Kennon about the importance of retaining deciduous teeth when possible Their early loss might in some cases seem an immediate gain, but it frequently led to serious irregularities later on He dwelt on the importance of normal breathing, pointing out some of the evils seen by the dental surgeon in mouth-breathers Where a large number of extractions was necessary it should be done in several stages The more septic the mouth the more important this became The clearance of the mouth of teeth at one operation should be a thing of the past

Mr J. **Cosbie Ross** pointed out the occurrence of large sequestra in the region of the mental foramen of the mandible, following an alveolar abscess of the posterior molar Normal bone was present in these cases between the original alveolar abscess and the residual sequestrum, and it was possible that thrombosis of the inferior dental artery was the cause of the necrosis Mr Ross also emphasised the assoc between ill-fitting dentures and carcinoma of t mouth, in an appreciable percentage of cas definite causative relationship could be establish

Mr. A E. **Burroughs** drew attention to t connexion between dental caries and inflamm of the ciliary body. Timely dental treatment m cause the cyclitis to clear up quickly

Dr G **Graham Macphee** was glad Mr. K had stressed the importance of alveolar ab There certainly were cases where removal of t offending tooth was not advisable, but in most c if the tooth concerned was unsaveable it should extracted at once, without "waiting for the sw to go down" In the treatment of true dental he had obtained good results by simply one wall of the cyst and bringing the buccal mu membrane into apposition with the epithelial All dental surgeons would agree that dentures shou renewed more frequently, patients did not r the harm that might be done by dentures whi longer fitted their shrunken gums

Prof. **Cohen** supported the plea for closer coop tion between medical and dental practice

NEW INVENTIONS

A TORPEDO INTRODUCER

Although in the treatment of carcinoma of œsophagus most laryngologists attempt some ty radium or radon application, it must be admitted that simple intubation has much to be said for it still The instrument here figured will be found useful and effective for the introduction of Souttar's tubes. It is a shaped pilot AB (Fig. 1) on a handle BC, over which the tube DE (Fig 2) fits as a cannula Owing to the sinuosity of the tube the fit is not perfect, and as the projecting edge D might catch on the growth, a tiny wooden dowel H is applied. The lower half of the pilot is swelled into a shoulder F which hitches on the tube In use the torpedo is loaded as in Fig. 2 and it will be found to pass, with the utmost ease, down the stricture after the latter has been dilated up to the size of the dowel When securely in position, the tube is held by a Patterson's forceps at E and the pilot is withdrawn The latter has been left shoulderless, and also deeply grooved at G so that it does not catch on the jaws of the forceps during removal The dowel of course slips off easily and is swallowed. Incidentally, with a set of these introducers one can insert tubes of any size required, and also dispense with the ordinary œsophageal bougies and sounds

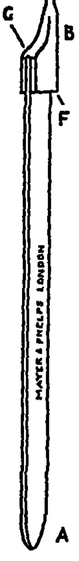
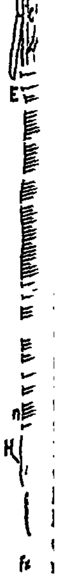


Fig. 1.



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The introducer is obtainable in various size suitable dowels from Messrs Mayer and Phel 59, New Cavendish-street, W.

A. Tumarkin, M.B., F R C S E, D.L

Liverpool.

REVIEWS AND NOTICES OF BOOKS

econtree and Dagenham

A report made for the Pilgrim Trust By TERENCE YOUNG, B A London S Sidders and Son, Ltd 1934 Pp 420 10*s* 6*d*

GROWTH of interest in social problems since the r has resulted in the publication of a number of rveys of the condition of the working classes in ban areas Surveys of Tyneside, of the Mersey, d of London, have to some extent followed the es of Booth's "Life and Labour of the Working asses" (1889) and have set the pattern for the other quiries Since their primary concern has been the asurement of poverty, it has been mainly the onomic aspects of working class life—wages cost living, occupations health, and housing—that have en surveyed, though some space has been given to e more definitely social aspects This emphasis is e to the uncomfortable but undeniable fact that a rtain standard of living is the foundation of most her activities, partly also to the concentration of tention on districts where knowledge of social tivities is easy to come by Two new elements ve however entered into the problems of working ass life since the war—viz, chronic unemployment d the provision of houses on a large scale by local thorities Clearly the effects of these on social nditions need investigation

The former has been dealt with to some extent in an lmirable study by Mr E W Bakké, Ph D, 'The nemployed Man', the latter has at last received tention in Mr Terence Young's investigation of the C C housing estate at Becontree and Dagenham, rried out under the ægis of the Pilgrim Trust Mr oung deals with a range of problems which have come important only with the growth of large scale unicipal housing schemes, and have thus fallen tside the scope of earlier surveys Specifically onomic problems occupy a minor though interesting rt of the book and add little to what is already own, similarly the effect of good housing conditions health have not been treated in detail No doubt is limitation of the field has been partly dictated the lack of statistical data owing to the peculiar uation of the estate within the areas of at least ree different local authorities The survey of econtree and Dagenham is thus, both of intention d of necessity, concerned with the problems of lministration and of social life arising from the housing of working class people on a large scale deed it may be argued that this is the justification r adding yet another social survey to those already dertaken for the stage is being reached where it is estionable whether the increase in knowledge from neral inquiries may fail to compensate the expense volved now that several types of towns have been udied At any rate there are particular problems at are more urgent The Pilgrim Trust, through r Young has courageously tackled one which is ry difficult to treat statistically and therefore most ble to suffer from the bias of the investigator In s preface Mr Young has faced up to this difficulty eliminating his own viewpoint from the arrange ent of the material He has however succeeded presenting an uncoloured statement of the growth the housing estate and by the division of the ook into three main parts—historical (or as he calls cinematographic), present (or aerial) and future—s managed to consider most developments in turn, d then in relation to each other He is to be congratulated on his solution of this problem in method

The historical section of the book is an analysis of the problems of developing social activities and adequate urban administration pari passu with a rapidly growing working class population in a hitherto rural area Mr Young's avoidance of forming critical judgments does not, however, *conceal the fact that* the L C C, in undertaking this immense housing scheme, failed to realise the effect of thrusting unwanted population on the authorities of Ilford, Barking, and Essex, and the probability of local services failing to expand with population Thus between 1921–23 many of the children on the estate were entirely without education until the vicar of St Thomas's put his church hall at the disposal of the Ilford council Even after the urban district of Dagenham was formed, the development of all services, in Mr Young's view, lagged seriously, for the whole organisation had to develop from the beginning without any effective public opinion behind it In an exhaustive account of the work of voluntary and religious bodies, Mr Young throws light on the part played by voluntary organisation in the social fabric and raises the question whether the modern policy of one class towns is socially desirable In the second part of the book it appears that the policy of the L C C towards tenants produced an abnormal age grouping of the population which put a severe strain *on local health and education authorities The selection* of young married couples with children caused a preponderance of need for maternity and child welfare services and the favour shown to prospective tenants suffering from tuberculosis gave rise to an unusual demand for special treatment for which little *provision was made*

The book as a whole suffers to some extent from Mr Young's policy of omitting from the text both statistics and references to appendices, missing these the reader may feel that more use might have been made of such statistical data as were available Without question, however, it is a most interesting and thoughtful study of certain aspects of the housing problem, which should be of use to students of social problems and to authorities with developing housing estates

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The Patient and the Weather

By WILLIAM F PETERSEN, M D assisted by MARGARET E MILLIKEN S M Vol III, *Mental and Nervous Diseases* Michigan: Edwards Bros, Inc 1934 Pp 375 Profusely illustrated

ALTHOUGH we are here reviewing what is entitled a third volume, it is the first volume of a series to appear and much of the material of the earlier two volumes which are for various reasons not ready for press is the subject of explanatory footnotes in the present text The first two volumes will deal with the response of the normal individual to meteorological environment constitutional differences and the influence of sex and with the effect of meteorological alterations on unstable individuals these volumes are held back pending the preparation of further meteorological data The volume under review presents studies in mental and nervous disease in relation to all that is included under the term "weather" and the data and observations may stimulate other investigators to work in a field which has been to a great extent uncultivated

The book is divided into three parts. In the first part the possibilities of psycho-analytical and meteorological approach are discussed with the suggestion that medicine has paid too little attention to the possibility that psychic alterations may be actually initiated by meteorological events Chapters follow taking cognisance of environmental factors, and much evidence from published work is furnished to show that, among many things which may bring about a change in the behaviour or condition of patients, the season of the year appears to have unmistakable influence The physiologists, it is suggested, have usually made their studies and based their reflections on the phenomena produced by alterations in barometric pressure, while thinking in terms of altitude, they have generally ignored the effect of weather at the usual range of habitation. This section closes with information, usually compiled from Chicago statistics, upon the regional distributions in America of physical malformations, of mentally inferior persons, and of suicide; and here the medieval habit of casting the horoscope will be brought to mind by a tabular statement of the months of conception of the various presidents of the United States. It appears that in the first seven months of the year 26 presidents were conceived, while none were conceived in what are described as the most stable months of the year in reference to weather—namely, August and September—and only five in the last three months of the year Nine of the presidents are starred as outstanding characters as shown by their official records, of whom six were born in the first half of the year. We doubt if the figures are large enough to warrant any practical conclusion being drawn from them such as would dictate which candidate to vote for in a presidential election.

Part II. of the book relates psychiatric episodes in connexion with their meteorological backgrounds, and includes disquisitions on the rôle of the meteorological environment, emphasising the value of such studies with the following quotation from Hippocrates: "As therefore it is the first of the bodily organs to perceive the intelligence coming from the air, so, too, if any violent change has occurred in the air owing to the seasons, the brain also becomes different from what it was" Part III. deals with the seasonal and geographical distributions of such nervous diseases as multiple sclerosis, tabes and paresis, poliomyelitis, and meningitis. No attempt is made to present a complete study of the diseases, it is stated frankly that the material has been selected as it proved suitable to illustrate the relation between nervous disorders and environmental alterations

The price of the book is not stated, but in order to reduce the cost of production lithoprinting has been used to good effect and the appearance of the book is that of being neatly typewritten This method considerably lessens the price by the avoidance of setting up metal type, the text being typewritten directly on to metal sheets from which, after chemical treatment, the impression is taken.

British Journal of Surgery

THE October issue (Vol. XXII.) contains the following papers Fracture of the Femur with Luxation of the Ipsolateral Hip, by Arnold K. Henry and M. Bayumi (Cairo). Two cases are reported, one treated by open reduction, the other by excision of the head of the femur The literature is reviewed and suggestions for treatment in the different varieties of the injury are advanced —Fragilitas Ossium Tarda, by Ian Fraser (Belfast) An account, covering four generations, of a family which illustrates the hereditary factor, and the relationship of blue sclerotics, brittle bones, deafness, scoliosis, and sprains Th course of the disease is described, and stress is l on the recovery of bony strength at puberty.—Cy in the Region of the Pancreas, by A. E We Johnson and E. G. Muir (London). The presence o *muscle-fibres in the wall of cyst*, in the case describ suggests either a teratomatous origin (from stra genital cells), or an enterogenous origin (from seq tration of fœtal gut).—Gangrene following Fractu (excluding Gas Gangrene), by Harold Dodd (Lond Three cases are reported, following fracture of t femur (one case) and fracture of the tibia and fib (two cases). Previously recorded cases are describ and tabulated. The causes, symptoms, and treatme are discussed.—Chronic Epididymo-Orchitis, or Fib sis of the Testicle of Filarial Origin, by P. N Br (Calcutta) The disease causes a chronic enlargem of the testis. Filaria were found in the tun albuginea. *The differential diagnosis is consider* from new growth; syphilitic orchitis and hæmatocele The Wassermann reaction was mod ately positive —Two Cases of Osteogenesis Imperfec with Blue Sclerotics in Natives of India, by W. Harnett (Calcutta) The hereditary factor was tra in the blue sclerotics.—Cholecystitis without St by W. Arthur Mackay (Glasgow). An attempt t assess the value of cholecystectomy in a series o 264 cases in which stones were not present. T nature of the pre-operative symptoms, the path logical changes in the gall-bladder, and the radiolog appearances are considered in their bearing prognosis.—Pancreatic Fistula: Report of a C Cure by Pancreato-Gastrostomy, by R. M (Toronto) Operation for acute pancreatitis, an removal of a large pancreatic slough, was follow by the formation of a pancreatic cyst, and eventua by a persistent fistula.—Torsion of the Gall blad by A. Rendle Short and R. Gordon Paul (Bristo Three cases are recorded, all successfully treated cholecystectomy. The literature is reviewed.—O Stage Lobectomy for Bronchiectasis: an account Forty-eight Cases, by A. Tudor Edwards and C E Thomas (London). A careful and detailed acc of the operation and an analysis of the results, wh show a mortality of 14 per cent. and a high proport of complete cures.—Sarcoma of the Duoden report of a Case, by Maurice Silverstone (Liverpoo Establishment of a Laryngeal By-pass, by H Pickerell (Sydney). To replace permanent trach tomy in a case of bilateral abductor paralysis of t cords, a silver airway was inserted connecting upper part of the larynx with the trachea —Exc of the Œsophagus for Carcinoma, by R Ruther (Uxbridge, Middlesex). Operation by the combi abdominal and cervical routes The mobilised a divided œsophagus was drawn into the periton cavity and there removed. The patient died two d later.—The Secretion of Mucus by the Epithel Cells of the Gall-bladder, and the Experimen Production of Mucocele, by Harold E. Hard (Sheffield) Mucocele was produced by tying t cystic duct, and emptying the gall-bladder of contained bile —Surgical Exposure of the Œsopha by L. O'Shaughnessy and R. W. Raven (Lond A description of the anatomical approach to t œsophagus at all parts of its course, illustrated drawings of dissections —The Experimental P duction of Cholesterosis (Strawberry) Gall-blad by D H Patey (London) The method used wa combination of cholesterol feeding and the produc of chronic inflammatory changes in the gall-blad It is concluded that cholesterol is deposited from t blood, and not secreted in the bile.

The Journal contains an account of a visit to Bohler's accident hospital in Vienna, and also s notes on some rare cases. The pathological supple is devoted to the various types of fibrocystic dis

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WINSLEY SANATORIUM.—Lady Lansdowne has op new buildings, including an administrative block, nu home, and women's recreation room at this institution

THE LANCET

LONDON SATURDAY, NOVEMBER 3, 1934

THE MEMORY OF GREAT MEN

BY the death of Prof SANTIAGO RAMÓN Y CAJAL the activities of a great student of the nervous system have come to an end As an anatomist and experimentalist he made the microscope subservient to the achievement of his goal, which was to reveal the minute structure of nerve and to discover its processes of degeneration and restitution In laboratories of neurology his name is enshrined as that of one who penetrated farther than most or all of his contemporaries into the arcana of neural tissue His approach was essentially that of the morphologist rather than physiologist, although, put thus baldly, the statement may somewhat mislead It would be truer to affirm that he believed that knowledge of micro anatomy underlies advance in study of function Like other leaders of research, he founded a school of ardent disciples who have carried on his methods and been animated by his spirit It so happens that in his recent Schorstein lecture Sir FARQUHAR BUZZARD has been revealing something of the private character and clinical performance of another great man, Dr HUGHLINGS JACKSON In a charmingly intimate fashion the lecturer sought to convey to his hearers what manner of man Dr JACKSON was, picturing by a series of sure touches his personality, his methods, his peculiarities, and idiosyncrasies That this should be done at all, and that the profession should be interested therein, is self evident proof of the greatness of HUGHLINGS JACKSON, everything about him has its interest But more is thereby intended, this sketch of the power of one man over his pupils indicates also in some degree the affection with which he was regarded by those who came closely in contact with him Like CAJAL, JACKSON, who used to speak whimsically of his "*bedlam*" theories, exerted an immense influence on younger neurologists, although he founded no "school" in any technical sense, and to day, more than 20 years after his death, his views of nervous function are permeating the minds and affecting the modes of thought of many who are not perhaps always fully aware of the source of the stimulus

HUGHLINGS JACKSON was a great clinician, a minute observer, a patient collector of bedside facts, yet his memory is not cherished for these features of his work alone, but rather for that genius of his which could create hypotheses and put them to the clinical test, which could pierce beyond the clinically obvious to the physiologically obscure, which could fit past isolated clinical phenomena to more universal laws of nervous activity His appeal to the men who gathered round him was thus a double one the glow of his wonderful mental endowment kindled their minds, while the charm of his personality irradiated their hearts The combination was unusual, perhaps, at all events it was irresistible Greatness has and always will have this effect on receptive and plastic youth So far as neurology is concerned, there has been invariably a sprinkling of men to whom the epithet of greatness is willingly and unreservedly applied, men whose prominence transcends the boundaries of country and race, who are claimed as masters by a multitude that never knew them in the flesh How long their fame will endure it may seem ungenerous to ask; nevertheless each generation has had its own leaders, and with its passing, often enough there has passed their reputation and the knowledge of their attainments The student conversant with the history of neurology, as Dr JAMES COLLIER has shown us recently in the Harveian Oration, may be able to praise the accomplishment of not a few whose labours are entirely forgotten and whose works are now unread, in the nature of things, where science is concerned, much of their legacy becomes out of date, loses its appeal [illegible] to awaken response, but are they any the less great on that account?

In any field of mental activity [illegible] of the fluctuations effected by time [illegible] thoughts The great ones of [illegible] are not always those who have so appeared to their contemporaries, and the remark is [illegible] pertinent to the field of art, as the [illegible] shows. In medical science, it is also true, [illegible] possibly in less degree, that greatness is not always recognised from the outset, there are, however, [illegible] comparatively few instances where a succeeding generation has "discovered" what its predecessors did not see—viz., that [illegible] was a great scientist whose work would live after him. The name of MENDEL [illegible] in this regard, but in medicine itself it is not easy to [illegible] an appropriate example Possibly an error of the other kind is committed [illegible] a man of outstanding talent or of [illegible] who, running the gauntlet of [illegible] to have been but mediocre [illegible] in asserting that on the whole [illegible] in medicine than in [illegible] of mental action? It matters little, [illegible] some contributors to medical knowledge have not in the [illegible] proved of such [illegible] as was anticipated [illegible] it matters [illegible] if the old tag has [illegible] for path of [illegible] with the [illegible] once taunted [illegible] who has imp[illegible] [illegible] significance [illegible] that animates [illegible] as [illegible] which he [illegible] those that [illegible] him or follow [illegible] by the [illegible] HUGHLINGS JACKSON [illegible] CAJAL [illegible] men in [illegible] ation [illegible] despite [illegible] view [illegible] days [illegible] and [illegible] where [illegible] chance than either of the other investigators. And the clinician cannot do better than take **JACKSON** for his guide Sir **FARQUHAR BUZZARD** has cited an impressive instance of the minute accuracy of **JACKSON**'s observation, the need for this painstaking precision is just as urgent to-day as ever Observation is an art that requires practice, not a few clinical phenomena of nervous disease are fleeting. To subject them to the closest scrutiny by seizing the moment of their manifestation is a matter calling for a high degree of observational skill. Further, to put them in their proper setting, to see them in their true perspective, to recognise them as the expression of nervous action, however disordered, needs a mind capable of imagination, such as was so remarkably evident in **HUGHLINGS JACKSON**'s case. Though new teachers arise and newer modes of envisaging nervous activities claim recognition, the student who imbues his mind with the principles that **JACKSON** laid down stands to benefit thereby to a wider extent than is apt now to be realised As the memory of great "inventors," to use Dr. **COLLIER**'s word, is kept green by lectures, orations, or other formal procedures recurring at stated intervals, it is fitting to recall the fact here that the first "Hughlings Jackson Lecture" was delivered by himself in 1897—surely a wonderful tribute to the appreciative insight of his contemporaries—and that it has since been given by famous neurologists of English and of foreign birth It is due again next year, on the occasion of the Second International Neurological Congress in London, when Prof. **OTFRID FOERSTER**, of Breslau, has been invited to be the lecturer.

IMMUNISATION AGAINST YELLOW FEVER

THE discovery by **MAX THEILER** in 1930 that mice are susceptible to yellow fever on intracerebral inoculation opened a new chapter in the history of immunisation against this disease, since the use of mouse-fixed or neurotropic virus for protecting human beings seemed to overcome many of the difficulties attendant on the use of the ordinary or viscerotropic strain of yellow fever virus. Two methods of vaccination have been employed. In the first, initiated in New York by **SAYER**, **KITCHEN**, and **LLOYD**, a combination of titrated human immune serum and neurotropic virus was injected This method has been used by **FINDLAY** in London and by **PETTIT** and **STEFANOPOULO** in Paris, where, however, instead of human immune serum one prepared from the horse has been employed. Rather more than 400 persons have now been immunised by this method and the immunity has been found to last for well over two years

In 1932 **SELLARDS** and **LAIGRET** began vaccinating volunteers with small doses of neurotropic virus alone, but the reactions were in some cases very severe **LAIGRET** therefore proposed to attenuate the virus by exposing the infected mouse brains to a temperature of 20° C for four days, two days, and one day—a process analogous, according to **LAIGRET**, to that used in attenuating rabies virus. The brains were then either preserved in glycerin or desiccated frozen and kept in the ice-chest After titration in mice they were inoculated into volunteers Three inoculations were given at intervals of 20 days; the first consisted of 1 c cm. of a 1 in 100 dilution of four days' mouse brain, the second of 1 c cm of a similar dilution of two-days' mouse brain, and the third of 1 c cm of a similar dilution of one day's mouse brain. Recently **LAIGRET**[1] has reported the results of immunising by this method more than 3000 people, mostly whites, in French West Africa. The results would perhaps have been of greater value if by previous tests an attempt had been made to ascertain whether any of these persons were previously immune. Although immunity was satisfactorily produced, about a third of those immunised developed febrile reactions on or about the sixth day, commonly after the first, more rarely after the second or third injection, in two cases there were symptoms of cerebral involvement. These results are perhaps not unexpected, since the injection of living, even though attenuated, neurotropic yellow fever virus in the absence of immune serum has very considerable danger

In our present issue Dr G M. **FINDLAY** records experiments on monkeys injected with infected mouse brains attenuated and titrated by Laigret's technique which show that brains attenuated for four days at 20° C either give rise to [illegible] virus, or, if virus cannot be detected in the blood stream, they fail to immunise. brains attenuated for one or two days always give rise to the presence of living virus in the blood. After one of the three injections, therefore, virus is almost certain to circulate in the blood stream although, owing to the wide variations in individual susceptibility, it need not necessarily give rise to clinical symptoms. Any person with neurotropic yellow fever virus circulating in the blood stream, however, is a potential danger both to himself and to the community in which he lives Personal danger lies first in the fact that the barrier between the blood stream and the brain may sometimes break down so that cerebral lesions result In animal as mentioned by Dr **FINDLAY**, there have been instances in which, after subcutaneous or intraperitoneal inoculation or neurotropic virus, encephalitis has developed in the absence of any cerebral trauma, and **LAIGRET** himself records involvement of the nervous system in man A second personal danger lies in the fact that in some people the neurotropic virus may give rise to jaundice and albuminuria as well as to leucopenia and bradycardia Evidence is also accumulating to show that in animals the neurotropic virus is capable of producing visceral lesions and is pantropic rather than strictly neurotropic It is, therefore, not impossible that neurotropic virus inoculated subcutaneously into man may on occasion revert to the viscerotropic strain. Finally, any person with neurotropic virus circulating in the peripheral blood stream is a potential danger to the community if he lives in a country such as West Africa, where *Aedes ægypti*, the mosquito vector of yellow fever s also present. Although **Mathis, Laigret,** and **Durieux** (1934) state that no epidemic followed their mass immunisation, experiments by **Davis, Lloyd,** and **Frobisher** (1932) and by **Roubaud** and **Stéfanopoulo** (1933) have shown that mosquitoes can take up the neurotropic virus from the blood stream of monkeys and transmit it to other monkeys, while **Davis**[2] has recently demonstrated that at every bite the infected mosquito injects at least 100 times the minimal infective dose for a mouse. Every person, therefore, vaccinated with living neurotropic virus alone should, if resident in a mosquito infected country, be kept screened from mosquitoes from the time of inoculation of virus until the development of immune bodies in the blood—a period, if Laigret's method be employed, which might last for some weeks.

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[1] Laigret, J . Presse méd, Oct 13th, 1934, p 1593

Hence it seems very doubtful if, with our present knowledge of the potentialities of the neurotropic yellow fever virus, mass immunisation with living neurotropic virus alone can in any way be justified, more especially when carried out in a country such as West Africa where *A. ægypti* is present. On the other hand, immunisation with living neurotropic virus and immune yellow fever serum provides, as shown by many observers, a reasonable method of reducing the possibilities of virus circulating in the blood stream. It will be the safest and most satisfactory means of immunisation until such time as it becomes possible to produce a virus, which is antigenically potent, but devoid of pathogenicity.

OBSTETRICS IN DUBLIN

Most of the records of work published year by year by maternity hospitals or departments consist of a mass of statistical matter arranged in tables which are not easily comparable. The attached commentary is usually so slight as to be negligible and the deductions, if any, drawn from the recorded experience are not stated. The dedication of almost the entire issue of a substantial journal[3] to detailed annotated reports from three great maternity hospitals, situated in the same town but under independent control is therefore welcome, especially as the report of a meeting at which their content was fully discussed is included.[4] The tables from the three institutions—the Rotunda, the Coombe Lying In Hospital, and the National Maternity Hospital—are not, it is true, arranged in a similar pattern, but the salient features of each are demonstrated by their respective Masters, and differences of practice are not difficult to detect. In fact the first and most lasting impression left by their study is that it is no more appropriate to speak of a Dublin school of midwifery than it would be correct to assume that the teaching of the many London schools is uniform. The reaction to such ordinary obstetric problems as the choice of technique for induction, the management of persistent occipito posterior presentation and the conduct of the final stage of normal labour when the head is on the perineum, varies so greatly in the three Dublin schools as to show clearly once again how small is the common ground between recognised experts in obstetric practice and how great the need of a properly controlled trial of rival methods. Even a woman with eclampsia, in the treatment of which "the Dublin method" has acquired international fame, may be subjected to widely different régime according to the hospital where she may find herself. While Dr **Bethel Solomons**, of the Rotunda, believes that many of his 60 patients with abundant albumin in their urine were saved from eclampsia by "routine treatment" in which venesection plays a part, and that in eclampsia "good nursing and rigid adherence to one technique are the requisites for good results," Dr J. F. **Cunningham** states that at the National Maternity Hospital they did not follow the Dublin treatment rigorously, they "washed out the bowel and kept the patient warm." A heresy practised at the Coombe Hospital is more disturbing in that it disregards a principle almost universally accepted, and on ample evidence, as fundamental. In this hospital during the year under review no attempt was made to guard the perineum in normal deliveries, the birth of the head being permitted without interference. This practice is said by Dr T. M. **Healy** to have led to an increase of 6 per cent in the frequency of perineal tears, but he considers it *worth a more extended trial since its introduction "coincides" with the lowest mor*bidity-rate ever recorded from this hospital—2.5 per cent according to the B.M.A. standard. It seems likely that coincidence is the right explanation. The corresponding rate at the Rotunda was 4.41 and at the National Maternity 5.5. In this connexion the Master of the Rotunda expresses his belief that a morbidity-rate of under 5 per cent in a large maternity hospital indicates a healthy condition which should give satisfaction to the authorities concerned. We applaud his courage in hinting that in this matter there is probably an irreducible minimum and in naming a figure which may be accounted a fair standard.

The fact that the Rotunda report represents the swan song of a retiring Master, providing a survey of his seven years of office, justifies a more detailed consideration of its message. In the first six years of his Mastership the maternal mortality for externs showed the low rate of under 1 per 1000. It is disappointing that 9 deaths in 1933 (among 1802 deliveries) raises the mortality for the seven years to 1.6 per 1000. The intern mortality for 1933 was 3.3 per 1000 deliveries, corresponding figures for the other hospitals being 10.3 (National Maternity), 7.0 (Coombe). Vaginal plugging as a routine treatment for accidental hæmorrhage has been abandoned at the Rotunda. In all except one of the 20 cases the membranes were ruptured and a tight binder was applied. On the occasion when plugs were used labour had set in when they were removed and Willett's forceps were applied and the infant was born dead six hours later. The Master considers these forceps to be best suitable for the purpose for which they were

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[2] Davis, N. C.: Amer. Jour. Trop. Med., 1934, xiv, 212.
[3] Irish Journal of Medical Science, Aug., 1934, Pt. [illegible]
[4] Transactions of the Royal Academy of Medicine in Ireland, [illegible] 49.

originally intended, but finds them of great value in cases of inertia and for keeping the head in position after correction of a malposition Eighteen cases of placenta prævia were admitted in the year, none of which were treated by Cæsarean section Podalic version was the method of choice and all the mothers left the hospital alive and well Two were given blood transfusions during the puerperium, this treatment is deemed valuable when the patient suffers loss of blood and the temperature starts to rise The 55 cases of disproportion formed about 1 per cent of all cases treated. This percentage is very low compared with that shown by other obstetric hospitals. No mothers and only 3 children were lost, 18 were delivered spontaneously, 7 by forceps, 3 after version, and 27 by Cæsarean section, mostly the lower segment operation In the 9 patients who had previously had Cæsarean section the delivery was effected by the vaginal route. Dr. SOLOMONS has convinced himself that trial labour with a view to vaginal delivery is safe after previous section provided that the woman is in hospital and is carefully nursed. None of the 14 cases of uterine inertia required Cæsarean section. Pituitary extract is regarded as dangerous in this type of case, the routine treatment being prolonged hot vaginal douches twice daily and rest secured by hypnotics

There was no death from puerperal sepsis at the Rotunda during the year. Dr. SOLOMONS deprecates the fashion of putting down every epidemic of sepsis to droplet or throat infection and believes that the use of masks, except when the accoucheur has a cold, tends to obliterate from the mind the important principles that make for clean delivery. His thesis is that "If people would learn how to wash hands, how to put on gloves and not to maul them when on, to keep a bowl of antiseptic beside them during the progress of a case, not to touch the vulva, not to make unnecessary examinations, to avoid traumatic deliveries, to follow a rigid and simple technique in the puerperal wards, the incidence of sepsis would be practically nil." His final plea, which all will endorse, is for a renascence of interest in the study and teaching of obstetrics. Gynæcology, as he rightly says, is so much simpler to teach and learn than obstetrics, that students, both post- and under-graduates, in a maternity hospital should be impressed with the fact that it must take second place to obstetrics. It is natural enough that the senior more experienced specialists tend to concentrate on gynæcology and to leave the practice and teaching of midwifery to the juniors But this means that their ripe experience acquired at great cost of leisure and rest over many years is being largely wasted It is to be hoped that at the British Post-Graduate Medical School obstetrics will be raised to its full dignity as one of the most important, though still one of the most backward, branches of medical achievement.

ANNOTATIONS

THE NOBEL PRIZE WINNERS

THE Nobel prize for medicine and physiology for 1934 has been awarded to G. R Minot, W. P. Murphy, and G H Whipple for their valuable research into *liver therapeutics in connexion with anæmia* It is not yet possible of course to assess the full significance of the contribution these men have made to medicine and physiology—and, one might add, to the economic organisation of society. But, as is true of all great discoveries, not the least part of its value is the new vision it has given to other workers in other fields. Minot, Murphy, and Whipple may well be described as horizon makers

Whipple, during an elaborate study of hæmoglobin regeneration in animals made anæmic by hæmorrhage, found that liver was more effective than any other substance in promoting hæmoglobin formation. Minot and Murphy then showed that liver given by mouth in large amounts to patients with Addisonian pernicious anæmia brought about a complete remission in the disease—a remission maintained as long as liver was taken in sufficient quantity Their paper was published in 1926 · before that time pernicious anæmia was a fatal disease; to-day it no longer deserves its ominous name, and sufferers from it may be as fit as their fellows These observations, together with the work of Peabody, Weiner, and Kaznelson on the bone-marrow, led to a new conception of the ætiology of certain blood diseases. It became clear that some of the anæmias arose from a failure of red cell development rather than to absence of marrow or destruction of cells It was also evident that this failure of development was due to a lack of factors essential for hæmopoiesis. In other words, many anæmias must be regarded as deficiency diseases It has since been shown by careful clinical and animal experiment that many substances, besides the one present in liver, are required for red cell development, for instance, iron and copper. A deficiency of hæmopoietic factors may be due to lack of essential substances in the food—as the nutritional anæmia of infants for example—but it may also be due to a "conditioned deficiency," that is to say, a deficiency dependent upon some failure of function in the body, such as inability to excrete gastric juice Wholly new to medicine and arising from the work of Minot, Murphy, and Whipple, the conception of a conditioned deficiency as a cause of disease has already proved applicable to branches other than hæmatology. Minot and his colleagues have shown that the polyneuritis of pregnancy and alcoholic polyneuritis are deficiency diseases in which both defective diet and a conditioned deficiency play parts, and there is every reason to suppose that such deficiencies are concerned in a variety of diseases. The foundation for work on these lines has been well and truly laid in the long series of admirable papers that have come during the last few years from the departments in charge of Minot and Whipple or from the men whom they have trained. If Whipple has developed an exquisite technique applicable to experiments on animals, Minot has shown yet again how far-reaching in its results a similarly exact technique may be when applied to the clinical study of human disease

Besides giving us a cure for a fatal illness and a key to many pathological locks, Minot, Murphy, and Whipple have provided fresh and urgently needed knowledge of the extreme importance of an adequate and varied diet in maintaining the general health the community—knowledge which has been increased a hundredfold by eager workers in the scientific field As was pointed out at the British Association both this year and last, it remains for the statesmen of the world to apply such information to the organisation of society

IS CANCER BECOMING MORE PREVALENT?

THE significance of the undoubted rapid increase in the crude figures for the recorded mortality from cancer in most civilised countries is still for many people a matter of controversy Recent correspondence, both in our columns and in those of the *British Medical Journal*, is sufficient evidence of this For their benefit we reproduce here an instructive graph taken from a recent paper[1] by C Bolduan and L Weiner of the New York Department of Health In all discussions based on crude mortality figures from cancer two things have to be borne in mind first, the figures do not represent the actual but the recorded mortality That means that they include those cases which have been diagnosed as cancer but which were not cancer, and that they do not account for those cancer cases in which the diagnosis was missed The extent of this error can be roughly estimated by an examination of the hospital records of autopsies Such investigations, which have been made repeatedly in the past, have shown that even in the best hospitals the error of diagnosis is between 20 and 40 per cent that this error falls mainly on the internal organs which are inaccessible to diagnosis, and that the percentage of missed diagnoses is much greater than that of cases erroneously diagnosed as cancer The actual mortality from cancer is therefore certainly higher than the recorded mortality from cancer, and the difference has been estimated in the past as being from 30 to 50 per cent when the whole population is taken into consideration since the hospitals offer the most favourable conditions for a correct diagnosis

The second factor to be considered is the chang age-constitution of a given population in the directi of a relative increase in the number of middle ag and old people In New York City, for instance, which the graph refers, the number of people ov 45 years of age is now one third greater than it wa generation ago Since cancer increases in frequen with advancing age, this factor has to be exclude if we wish to find out whether there is any increa in the mortality from cancer apart from the incre due to a greater number of middle-aged and o people In order to analyse the crude mortali figures in such a way as to exclude these disturbi factors, the authors take the deaths from canc calculated per 100,000 population at different ag groups in the two sexes and they separate the canc mortality in the accessible sites—where the error diagnosis is small—from that of the inaccessib sites A glance at the graph shows that in t accessible sites (called by the authors "visib cancers") where the errors of diagnosis were n much more frequent 30 years ago than they are no the death rate from cancer has not increased sin 1901 Cancer of the inaccessible sites, on the oth hand, where improvements in the method of diagnos during the past 30 years are likely to have increase the number of correct diagnoses, shows a rapid increa which is, however, restricted to the older age grou and is especially marked in males

This is not the first time that this method analysing the crude mortality figures from cance has been applied It was developed in this countr 40 years ago by King and Newsholme, and has sin been applied to different populations by a numb of authors such as Bashford, Heiberg Willco Weinberg and Gastpari Wells, Peller, and Schin and Senti—and always with the same result Indee Peller claims that the figures for Vienna actuall show a decrease in the fourth to the seventh decad and that an increase is limited to age groups ov 70 years of age These analyses were made, not o national statistics, but on the statistics of big citi

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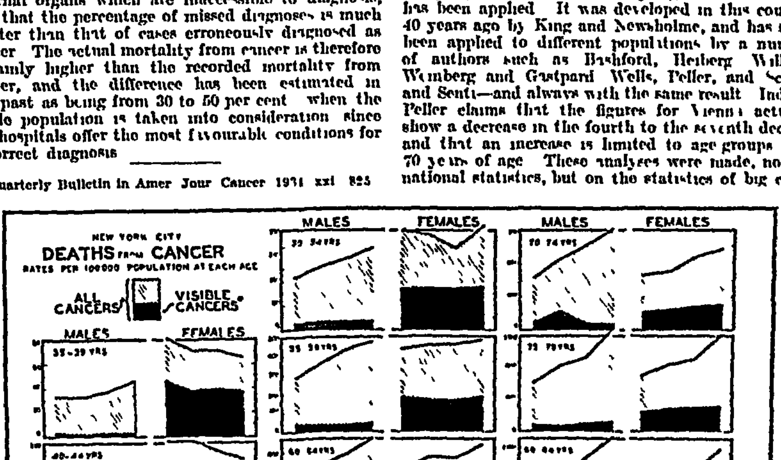
[1] Quarterly Bulletin in Amer Jour Cancer 1934 xxi 825



*VISIBLE CANCERS INCLUDE CANCER OF THE SKIN, BREAST, BUCCAL CAVITY AND FEMALE GENITALIA where, owing to the presence of large hospitals, the most efficient medical service is available, so that the disturbing factor of diagnostic errors is minimised. All the authors arrive at the conclusion that apart from the increased cancer mortality resulting from the greater longevity of the population, cancer is probably no more prevalent to-day than it was one or two generations ago. Whatever view one may take of this conclusion, the facts are established sufficiently clearly to serve as a warning against the uncritical use of crude figures representing the recorded cancer mortality.

ELECTROCOAGULATION IN GALL-BLADDER SURGERY

THOREK[1] thinks that leakage of bile from the raw liver surface that may be left after extirpation of the gall-bladder has a good deal to do with the relatively high mortality of this undertaking. The bile comes from exposed bile-capillaries and ducts, and its leakage, he believes, is aggravated by the presence of drains. His own procedure is designed to leave a dry liver "wound" and a scar in the liver that will heal without bleeding; it dispenses altogether with drainage The operation is a partial cholecystectomy, the part of the gall-bladder adherent to the liver bed being left in situ and there treated by electrocoagulation, which effectively seals the capillaries and bile-ducts in the underlying live surface and converts the whole thickness of the gall-bladder wall into a sterile inert tissue, dehydrated and solid. This tissue has been shown in experimental operations to be eventually encapsulated and absorbed. Dense adhesions form at the height of the reparative process, but at its completion they are represented merely by a few fine strands Because of the pressure of the coagulated mass, secondary hæmorrhage need not be feared; moreover the likelihood of embolus is said to be minimised by the absence of thrombosing action of the electrocoagulating current on the vessels of the liver. The method described in detail in Thorek's paper has been successfully employed in 75 cases without a death Apart from the avoidance of biliary seepage, the absence of drainage lessens the liability to hæmorrhage from the erosion of vessels, to cardiac embarrassment, to acute dilatation of the stomach, and to hernia. In fact, Thorek is definitely of opinion that if the exposed liver surface can be satisfactorily covered with peritoneum, a gall-bladder operation without drainage stands the best chance of success.

THE ÆTIOLOGY OF AGRANULOCYTOSIS

WE have commented more than once on the possible significance of amidopyrin (Pyramidon), and other drugs containing a masked benzene ring, in the ætiology of agranulocytosis Jackson,[2] who had had more experience of this syndrome than any other clinician, has reviewed a series of his own cases in the light of this suggestion He thinks that too little attention has been paid to the temporal relation between the administration of the drug and the appearance of the blood picture before, after, and during the disease Also, he says, it must be borne in mind that under the name of agranulocytic angina there are several different pathological entities He would confine this diagnosis to cases showing a greatly reduced white cell count with almost complete absence of polymorphonuclear cells and a virtually unimpaired red cell and platelet count There should be no bleeding from the mucous membrane, no enlargement of lymphatic glands unless it can be readily accounted for by local sepsis and no notable enlargement of the spleen. Further at the height of the disease few if any immature white cells should appear in the peripheral circulation Neither the fever nor the ulcerations are characteristic, indeed, the latter may be absent. Extreme leucopenia with a relative or complete absence of granular white cells, is, Jackson claims, not pathognomonic of a single pathological entity. "Such findings do not by any means make the diagnosis of agranulocytic angina," for extreme leucopenia may be seen in aleukæmic leukæmia, in Hodgkin's disease, in miliary tuberculosis of the bone-marrow, sometimes in metastatic bone carcinoma and in patients with overwhelming sepsis In true agranulocytic angina the prodromal symptoms are often such as call for the administration of antipyretics, and this makes it easy to blame the remedy for the signs and symptoms Having analysed 27 of his own cases (which he believes to present the classical picture and in which there was unequivocal evidence about the administration of pyramidon and allied drugs) in 26 per cent. of them, he considers, the disease may have been caused by these drugs. In 30 per cent of the cases a critical examination of the evidence showed that although the drugs were taken in considerable quantities they had no causative relation to the disease Forty-four per cent. of the 27 patients had no medicaments of this type, yet their clinical and hæmatological pictures were similar in every respect. The number of cases is small but the close analysis of them, taken in conjunction with the other available evidence, suggests that while in all cases of apparent agranulocytosis an extremely careful history of drugs employed must be obtained, such drugs are of ætiological significance only in a proportion of cases As Jackson says, "Chance alone may play havoc with our reasoning"

VOLUNTARY STERILISATION

HUMAN sterilisation is a complicated question with genetic, psychiatric, physiological, and social aspects How much importance, it is frequently asked, are we entitled to assign to heredity as a causal factor in disease, and how much reduction in its incidence are we justified in expecting from the application of genetic methods? To what extent particularly are disorders and defects of the mind hereditary? What is the effect on the sexual physiology and endocrine balance of the male of the ligation of the vasa deferentia? And what are likely to be the social results of legalising sterilisation? What safeguards shall we devise to prevent abuses and how effective will they be? Until the publication of the Report of the Departmental Committee on Sterilisation (Brock Committee) in January this year there was much uncertainty upon these subjects The series of articles entitled "Eugenics in Practice" which appeared in our own columns during May and June was an attempt to focus consideration on certain essentials Since then the proposal of legalising voluntary sterilisation for certain carefully selected persons has received increasing support. Thus, on June 27th and July 10th resolutions in general support of the recommendations of the Brock Committee were passed by the County Council's Association and the Association of Municipal Corporations. A joint committee has moreover been called by the Central Association for Mental Welfare to secure the translation into law of these recommendations. The joint committee also contained representatives of the Mental Hospitals Association, the National Council for Mental Hygiene nd the Eugenics Society The Royal College of Physicians of London and the Royal Medico Psychological ssociation have appointed representatives without ower to commit their respective associations The int committee has produced a Handbook for peakers and would be glad to get into touch with edical men and women who are in sympathy with s aims Communications should be addressed to the ecretary, Joint Committee on Voluntary Sterilisation, 9, Eccleston square, London, S W 1

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[1] Thorek, M Jour Amer Med Assoc, July 21st, 1934, p 169

[2] Jackson, H, Jr. Amer. Jour. Med Sci, 1934, clxxxviii, 482

REACTION TO NEUROMUSCULAR IMPULSES

Nervous activity is now attributed, following bservations made during the last few years, to the assage of single impulses in rapid succession along he fibres The magnitude of their effect upon an nd organ—e g, group of muscle fibres—depends on heir frequency, a strong reaction being provoked hen impulses follow rapidly upon each other and a eak reaction when they are more widely separated recent paper by Lady Briscoe, M B,[1] shows that he story is not quite so simple as this, in that a udden change from one frequency to another does ot always give the expected result The first series f impulses appears to have an "after effect" which s manifested sometimes as a favourable and some imes as an unfavourable influence on the second eries The factors determining the type and duration f this after effect involve highly technical questions ssociated with strengths of stimulus and the actual requencies of stimulation used It is interesting to ote that the experiments were performed upon erves which, though normal in other respects, had een severed and were connected only to muscles nd not to the central nervous system In spite of his certain of the effects were profoundly modified, nd even reversed by varying the depth of anæsthesia, nd Lady Briscoe suggests that the depression of eflex activity seen in deep anæsthesia may have a urely peripheral component Moreover, the results vere also influenced by the state of tonus existing n the rest of the musculature of the body emphasising he important part played by the circulation which vas the only connecting link of the muscle under nvestigation with the rest of the body The author lescribes a method for estimating general tonus in nother communication [2]

CORRIGAN AND HIS PULSE

In the September number of the *Annals of Medical History*[3] an essay upon the work and personality of the famous Corrigan gives a fairer impression of he man than will be derived from the contemptuous nd imperfect account of him that is given in the Dictionary of National Biography Corrigan has one down to fame as the discoverer of the "water-ammer pulse," the pulse with the forcible impulse ollowed by collapse and accompanying aortic ncompetency The phenomena were described first n The Lancet on Feb 7th 1829, in a paper entitled ingular Pulsation of the Arteries necessity of he employment of the stethoscope and in the linical account of a case of aortic aneurysm it is een that the paper was written primarily to proclaim he virtues of the stethoscope, which had been introduced some 16 years previously, but whose value ad not been properly recognised The real message ontained in Corrigan's paper seems to have escaped he attention of the contributor to the Dictionary few weeks later in the same volume of The Lancet Corrigan writes a paper entitled An Inquiry into the Causes of Bruit de Soufflet and other stethoscopic manifestations of cardiac disease, again laying stress on the value of the stethoscope though demurring to some of Laennec's deductions from its use The first of these papers contains the earliest demonstration of Corrigan's pulse, though the article which established his fame appeared in the following year in the *Edinburgh Medical and Surgical Journal*, where he described the symptoms resulting from an inadequacy of the aortic valves Clifford Allbutt, in Allbutt and Rolleston's "System of Medicine," definitely attributes to Corrigan our early knowledge of the mechanism and symptoms of aortic regurgitation, and makes no allusion to claims of priority set up in favour of Vieussens or Hodgkin Corrigan is included in medical history in connexion with the water-hammer pulse, but he was a great general physician and before his day as a hygienist He was deeply interested in medical sociology, and made investigations into the relation between starvation and typhus fever in Ireland which were of practical value He was for a time Member of Parliament for the city of Dublin, and served five times as president of the Royal College of Physicians of Ireland

MICRO-METHODS IN THE DIAGNOSIS OF SYPHILIS

The general trend in the serology of syphilis during the past decade has been towards a flocculation test to replace the cumbersome Wassermann reaction At the League of Nations Conferences at Copenhagen in 1928 and Monte Video in 1931 reports were made of comparative tests carried out on a large scale With the Wassermann as the indicator the various flocculation tests were graded, the final conclusion arrived at was that for the time being at any rate it would be unsafe to rely entirely on any single flocculation test, and it was recommended that a recognised Wassermann reaction should be carried out as a routine—confirmed by a recognised flocculation test done on the exact lines indicated by the author Dr I J Wyler[1] in this country has revived interest in the Wassermann reaction by describing a method for increasing its sensitivity His contention that the use of larger quantities of serum increases the sensitivity without diminishing the specificity of the test has been corroborated by Dr R W Fairbrother,[2] who found that this modified Wassermann reaction gave him more reliable results both in treated and untreated cases of syphilis than did the Kahn reaction On the other hand laboratory workers are inclined nowadays to look for methods which demand ever smaller amounts of material and the accuracy of these micro-methods is always being questioned Dr Wyler has now[3] set out four tests for the sero-diagnosis of syphilis so modified as to give accurate results even when only minute amounts of serum are used The tests considered besides the Wassermann are the Kahn and the Meinicke micro-reactions and the Rosenthal reaction In controlled series of tests all these showed remarkably good agreement with the Wassermann reaction and with the clinical findings the Meinicke reaction was more sensitive than the particular Wassermann used, but yielded an occasional false positive reaction This would suggest that the Meinicke should only be used as a [illegible] test but owing to the simplicity of its [illegible] and the extraordinary small amount of unheated serum required for its use, Wyler urges that it should be adopted as a routine. The Kahn micro-method, using only 0 06 c cm of serum, compared favourably with the standard Kahn method, which has now stood the test of time well The Rosenthal reaction is simple to carry out, and very specific, showing accurate agreement with the Wassermann, but it is not so sensitive as the other flocculation tests In his survey of the results Wyler admits, however, that where but a minute drop of serum is available—sufficient only for one test—it would not be right to rely entirely upon a micro-flocculation method, and the micro-Wassermann remains the method of choice. As all four tests described can be done on a total of 0·15 c.cm of serum, which is readily obtainable from 0 5 c cm. of blood, it should be simple for any pathologist having to deal with small amounts of sera to adopt the Wassermann and Kahn reactions here described, and to do a standard flocculation test as well as a complement-fixation test The prevalent belief that it is difficult to obtain half a cubic centimetre of blood in routine pædiatric practice appears rather surprisingly to be shared by Dr. Wyler This is not the view held by most experienced workers

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[1] J Physiol 1931 lxxii [illegible]

[2] Ibid 1931 lxxii 35

[3] [illegible] vi 391

[1] [illegible]

[2] The Lancet 1932 [illegible]

[3] [illegible]

SURGICAL INSTRUMENT CRAFT

THREE years ago at the annual dinner of the Surgical Instrument Manufacturers' Association, Sir Thomas Dunhill surveyed the relation between instrument maker and surgeon, from the time when the operator was able himself to make the simple tools required for his work Little by little the two crafts diverged, some becoming more interested in making instruments, others in using them For himself, he added, while he favoured simple instruments, a patient's life might depend on the availability of complicated apparatus Mr Patrick Maw (of S Maw, Son and Sons) presided on that occasion, and at the annual dinner last week when Mr. H Guy Drew (of Down Bros) presided, Mr W. H. Ogilvie spoke of the making of surgical instruments as a craft comparable to that of the boat-builder The motor industry, he said, typified all that he hoped that the surgical instrument maker would never become, every year the design was more beautiful and the quality of the work worse The maker of motor-cars had ceased to be a craftsman, but surgical instrument making should and would remain the individual work of artists in wood, metal, leather, or glass; and the worker must be not only an artist but something of a chemist, mathematician, and even a fashion expert Recently Mr. Drew had designed for him a sewing machine which might save half an hour of an operation and a prostate needle which would easily put stitches into impossible positions Ten minutes in Mr Drew's office would turn one of his own Heath Robinson drawings into a feasible specification Mr Drew in reply said something about the enormous progress in the art of surgery since the war In a single week, he remarked, British manufacturers might be called upon to produce 100 new designs of surgical instruments. He spoke of the evils of standardisation in arresting progress, and was happy to announce the inauguration, in this the eighteenth year of the Association's life, of an Institute of British Surgical Technicians with two duties: (1) to evolve a code of professional conduct, (2) to bring into being an educational scheme with a nationally recognised certificate It was hoped ultimately to obtain similar recognition to that of other groups of medical auxiliaries The manufacturers of surgical appliances were working even under a greater disadvantage than surgical instrument makers becau of the traders who antagonised the public by th advertising and business methods. No surgic appliance maker was admitted to the Associatio without a certificate of skill, experience, and reput plus an undertaking that he would not sell or f any appliance without the instructions, or the subs quent approval, of some qualified medical authori The Association had started a course of training i anatomy and physiology at the Chelsea Polytechn at the end of which examinations would be held an certificates granted. This year the classes had double in number and the scheme was already assured of sufficient number of entrants to make it a success.

THE VALUE OF AVERTIN

THERE are still anæsthetists who doubt the admis bility of any wide use of Avertin. They are most to be found perhaps among those who have th least experience of the drug and they will find littl support in a recent paper on the subject by Welc Bourne[1] He gives details of a thousand administra tions and they clearly show the value of this bas narcotic when properly employed. Proper employ ment means in the first place careful discriminati among patients so that the most suitable and th safest dosage may be given No hard-and-fa determination of dose by body-weight alone can b consistently satisfactory As with other anæsthetic so with avertin, the patient's reaction is in accordanc with his habits, his general physique, and above a with his mental attitude. These must be studi and the amounts given must be lessened or increas in agreement with the anæsthetist's estimate of th patient's reaction. Bourne favours a general level o dosage higher than that commonly accepted, and i a third of his patients no other anæsthetic was requir It should rarely be necessary to supplement th avertin with any anæsthetic other than nitr oxide, and avertin by itself causes no nausea Amo the thousand patients there was no fatality whi could be fairly attributed to the drug.

Manchester Royal Infirmary has opened its r dent posts to women on equal terms with men

Dr. Mabel L Ramsay is standing in opposition t Sir Henry Brackenbury for the seat on the Gener Medical Council, as a direct representative for Engla and Wales. Dr Ramsay has been engaged in gene practice for the past 28 years, 26 of these in Plymout where she is now specialising in obstetrics a gynæcology She has been president of the Medic Women's Federation and represents it on th Insurance Acts Committee, and she is a member o the disciplinary procedure committee (N.H I) of th Ministry of Health. Dr Ramsay believes t time is opportune for the appointment of a wom Councillor, for of the total number of names on th Register more than 5000 are women

Dr Leonard Kidd is inviting registered medi practitioners resident in Ireland to elect him again their representative on the General Medical Cou when his term of office expires on Dec 31st He h sat on the Council since 1906 and has served on th examination, education, public health, and phar copœia committees He stands as a provincial gen practitioner, having always held that the elec members were intended by the legislature to general practitioners, not connected directly indirectly with the teaching and qualifying bodi each of which nominates its own member. Dr. K is a past president of the Irish Medical Associatio

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[1] Canad Med Assoc Jour., September, 1934, p 2

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXV.—THE PROGNOSIS OF IRITIS AND IRIDOCYCLITIS

The essential condition which governs the prognosis of iritis and iridocyclitis is the ætiology of the inflammation. Unfortunately many cases cannot be traced to any very obvious kind of infection, and it is therefore difficult to give any definite forecast of the probable duration of the disease *and of the efficiency of the eye as a seeing organ thereafter*. No matter what the ætiology, however, iritis or iridocyclitis can never be considered lightly. Even in the slighter degrees of the acute form, three or more weeks must elapse before the inflammation completely subsides if everything goes favourably; the most favourable signs are a rapid and complete dilatation of the pupil with atropine and the rapid disappearance of pain and congestion. Where the pupil responds slowly or not at all, and when the signs and symptoms of inflammation persist, an iritis is likely to become a cyclitis; and an iritis which persists has an unfortunate tendency to relapse, while the duration of a cyclitis may certainly be reckoned in years. In dealing with an organ of the structural delicacy and refined function of the eye, the time factor is of considerable importance, for small changes have large effects. Moreover, while in most organs of the body healing by scar tissue is the end to be desired, anything corresponding to a scar in the eye is a disaster, and when an inflammatory process has progressed much beyond the stage at which almost complete resolution is possible, perfect functioning is rarely regained. Comparatively slight cases of iritis or cyclitis may leave very serious results if they are improperly treated; and such results in severe cases are the rule, no matter how they are treated.

Types of Anterior Uveitis

It may be well to consider the more usual types of anterior uveitis seriatim from the ætiological standpoint.

SYPHILITIC

Although syphilis is a common disease, syphilitic iritis does not appear to be very common. The most recent figures show that it occurs only in from 0.42 to 5.37 per cent. of patients. We may differentiate three types: the first of these occurs in the relatively acute secondary stage, and although most of these cases are indistinguishable from any ordinary iritis, recognisable signs of secondary syphilis elsewhere are usually to be found if looked for carefully.

The second type may occur in the course of the disease or possibly as the result of faulty treatment. If, for example, in a case of well-established untreated syphilis arsenicals are vigorously used in the early stages, a large number of spirochætes are killed, their toxins are liberated, and a Herxheimer reaction is produced which may involve the iris. On the other hand, if efficient treatment is begun early but is not continued for a long enough period, the iris is very liable to a recidive reaction, since it and the uveal tract, in common with the central nervous system, are slow to develop natural immunity. If, therefore, the normal inflammatory response has been aborted by the early use of antisyphilitic remedies, the few spirochætes that remain after treatment has ceased will find, so to speak, a virgin soil and grow apace with the production of a severe iritis. These recurrent attacks of inflammation were considerably more frequent when the possible harmful effects of initial doses of arsenical compounds were not fully realised, and when it was thought that relatively few doses constituted adequate therapy; to-day, when the treatment of syphilis is thoroughly understood, their incidence is much more rare.

A further and very rare type of syphilitic iritis is the severe plastic cyclitis which occurs in young infants with congenital syphilis; this is almost invariably of grave prognostic significance. In the other syphilitic types, provided adequate treatment is undertaken before grave structural changes have occurred, the prognosis is not necessarily bad, although *improvement is usually very slow*.

It is obvious, of course, that patients with syphilis may develop iritis from other causes; on the other hand, it is not uncommon in late syphilitic iritis, as in other late manifestations of this disease, to find the Wassermann and other serological tests negative. Nor is the therapeutic test, depending on the response to specific treatment, reliable, since ocular manifestations of syphilis are notoriously difficult to cure, and, again, many cases of non-specific iritis are benefited by a course of arsenical treatment. The patients with the anterior type of uveitis (iritis) as a rule respond more favourably than those with the posterior type (choroiditis). It may be suggested that in a small percentage of cases the ætiology of uveitis is syphilis, and that antisyphilitic treatment is of benefit in about 60 per cent. of these cases of syphilis. In about 40 per cent. of the cases in which syphilis is not a factor, antisyphilitic remedies are of definite benefit also.

GONORRHŒAL

An initial attack of iritis frequently occurs in the *subacute stages of gonorrhœa*, usually associated with an arthritis. This iritis may be extremely acute, the anterior chamber filling with a characteristic gelatinous exudate. Provided treatment is opportune and efficient the prognosis of such an acute attack, considering its alarming clinical appearance, is frequently good. Of more serious prognostic significance is the tendency to relapse. It is a story more common than appears to be generally supposed, that after an initial attack of gonorrhœa nothing may happen for many—perhaps 20—years, but that thereafter bilateral attacks of very great severity and great chronicity occur, probably because some anaphylactic element is operative whereby the iris becomes sensitised to the action of toxin. To overcome this unusually prolonged vaccine treatment is necessary; otherwise any factor which dislodges a few cocci or their toxins is liable to excite an immediate and violent reaction in the sensitised iris. It is possible that the condition is not simply due to the gonococcus but is complicated by an associated infective prostatitis in which the streptococcus plays a preponderating rôle. But in any case the severity of each attack and their recurrent habit make the prognosis grave, each one doing to the iris a little more damage which may be permanent and adding to the media a few more opacities which, being cumulative, may become serious, unless efficient local treatment is applied to the deep urethra and prostate as well as thorough desensitisation by the use of a vaccine.

TUBERCULOUS

Typical tuberculous iritis, which usually occurs in adolescents or young adults, is on the whole a rare condition; it is not necessarily grave, and while the prognosis is grave as [illegible]

Dr. Robert Wells Library

When the disease is recognised and treated before fundamental damage accrues to the tissues of the eye, a great deal can frequently be done; but treatment must be thorough and, above all, prolonged, including rest on a sanatorium régime, artificial sunlight or natural sun treatment in alpine surroundings, and tuberculin given persistently for one or two years. Atypical tuberculous irido-cyclitis, on the other hand, is probably a very common condition Unfortunately it is an exceedingly vague clinical entity, mostly it has nothing to differentiate it from other types of irido-cyclitis, and the diagnosis is frequently the unsatisfactory one of a process of elimination in the absence of other possible causes and in the presence of positive serological tests for tubercle It is probable that it is essentially a demonstration of an allergic state: a healed focus of old tuberculosis may light up as a result of extreme exhaustion, the tubercle bacilli are disintegrated as the patient has acquired immunity, but in their disintegration they set free tuberculo-protein, unfortunately the patient is allergic and therefore develops a tuberculo-allergic iritis, an attack of what would clinically be termed a simple iritis There appears to be no question (except in the rarest cases) of the actual lodgment of tubercle bacilli in the eye, and the disease is by no means necessarily of the malignant and destructive type By its chronicity it frequently does irreparable damage to the ocular media; but on the other hand it may assume relatively benign forms, and in favourable cases it is kept in check and eventually quietened by desensitisation by tuberculin, provided the tuberculin is persisted in for a sufficient period of time. The most significant single factor in the prognosis is probably age; young adults do well, but with patients over 50 years the prognosis should be guarded, and in those (fortunately rare) cases above 60 the prognosis is not at all good.

DUE TO INFECTIVE FOCI

Most cases of anterior uveitis are probably due to infective foci of a mild or chronic nature in remote parts of the body. Proof of this is difficult, but the conception that a circumscribed area of infected tissue, itself giving rise, perhaps, to no symptoms, may be responsible for pathological processes occurring elsewhere, is corroborated by clinical findings on occasions so numerous wherein an infective focus has been established, and wherein the ocular symptoms have cleared up on removal of that focus, that it must be accepted as fact The most common such foci of infection are the teeth, tonsils, nasal sinuses, the prostate and deep urethra, the colon, the urinary tract, the uterus, and the gall-bladder. Although the fact of focal infection must be taken as established, its mechanism is not yet clear While it must be admitted that it is possible to produce an endocular inflammation by the lodgment in the eye of either bacteria or their toxins, there is also a considerable amount of evidence that allergic sensitisation of the ocular tissues may be a dominant factor in the occurrence, and especially the recurrence, of inflammatory conditions. By this means the tissues respond with an inflammatory reaction to bacteria, their toxins, or other foreign proteins when these are present in concentration so small as would excite no such response in the normal individual. In this event the stage is occupied, not so much by the bacteria, as by the local allergic state to which their presence has given rise It follows that to determine a definite ætiology is often impossible; in the present state of our knowledge the most that can be done is to eliminate in so far as is practicable the most obvious source or sources, and to increase the re- ance of the patient as much as possible by the judicious employment of autogenous vaccines.

The prognosis of such cases largely depends on the possibility of determining the ætiological factor, and of the practicability of eliminating this without lowering the resistance of the patient beyond the limits of safety. A search should be made to include the teeth, the tonsils, the nasal sinuses, the alimentary canal, the prostate, the cervix uteri, the urinary tract and so on; but in the assessment of the importance of these it must be remembered that the removal of a particular focus, although it is frequently followed by a spectacular cure, cannot be relied upon to remove the source of infection in any particular case. More than one focus may exist simultaneously, a strepto-coccal infection may involve the teeth, the tonsils and the colon, or two different types of infection may be firmly established in two different regions. In this way it is easy to fall into the error of over-enthusiasm, and there is no doubt that in recent years, partly through insufficient understanding of the causes of disease, partly through a desire to some pragmatic and radical course of much unnecessary and mutilating surgery has done in the wholesale removal of teeth, tonsils, appendices, and the rest, or in the scavenging of nasal sinuses, endometria, or colons Time and time again we see patients on whom an enormous amount of radical surgery has been performed for the sake of an iritis which goes placidly on in complete disregard for the mutilation for which it is responsible.

It must never be forgotten, moreover, that the systemic expression of any infection is the result of the interaction between the infective focus and the patient. The resisting powers of the patient are as important in assessing a prognosis as are the activity of the infective micro-organisms; it is only after these have been evaluated by a detailed and bro- medical examination that the wisdom or the of radical methods of treatment can be foreseen More especially is this so in those cases which a multiplicity of possible foci. This factor of resist-ance is exceedingly obscure and difficult to assess every human body each year and each day of successfully copes with innumerable infections, were it not for the vigilant activity of the forces immunity no one would survive infancy. One patient may harbour many readily demonstrable sources infection, each of them teeming with virulent organisms, and may escape systemic disease an therefrom for an indefinite period; a second wi a single minute focus may develop grave out of all proportion to the original cause O patient on the removal of a focus may show dramatic and immediate recovery, a second, which equally conclusive evidence can be presented shows little or no improvement and the disease slowly and indefinitely grumbles on It is true that struc-tural damage may have already occurred so exten- as to be beyond repair, but in other cases a chain events seems to have been initiated in the eye which the person himself is unable to stop, the inflammatory process becomes a "habit" which the patient seems powerless to overcome, his fight- resources seem to have given up the struggle, and the disease becomes so firmly established as to co independently of the primary focus, which, inc may have been without ætiological significance the time of its elimination

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POST-GRADUATE LECTURES

For the fifth week in succession we publish extracts from addresses delivered to old students in recent courses at the London teaching hospitals Dr Maitland-Jones spoke at the London, Dr Hunt at St Mary's, and Dr Warner at Charing Cross Hospital

SOME DISORDERS OF THE UPPER RESPIRATORY TRACT IN THE INFANT AND YOUNG CHILD

(DR A G MAITLAND JONES)

THE choice of my subject has been dictated by the fact that many disorders of this part of the body are common in the infant, furthermore, even if some of the conditions I propose to consider are rare, yet these latter include some of the gravest emergencies to be met with in the practice of pædiatrics

Let me begin with nasal discharges The most frequent cause of a nasal discharge in the infant is the "common cold" In the first few months of life a cold is apt to be a serious matter, not only does it produce gastro intestinal disturbance, but also owing to the fact that the posterior nares are relatively smaller in the infant than in the adult, the nose is easily blocked by hyperæmia and sucking is rendered difficult The treatment of this nasal obstruction is gently to instil a few drops of oil into the nostrils before nursing, *olive oil should be used rather than* a mineral oil, as the latter if used in excess may set up a "lipoid pneumonia" In severe cases a few drops of adrenaline solution may be instilled just before nursing Other causes of nasal discharge are nasal diphtheria and congenital syphilis, in both of these conditions the discharge is profuse and often blood stained In older *children a one sided nasal* discharge should always suggest the possibility of a foreign body

The next portion of the respiratory tract to be considered is the nasopharynx, and here one is faced with the vexed question of the value of tonsillectomy I am very much of the opinion that far too many children have their tonsils removed and their nasopharynx scraped for adenoids Obstruction to respiration is a definite indication for operative treatment, as is also recurrent otitis media and cervical adenitis particularly when these conditions are associated with large and apparently unhealthy looking tonsils Mere enlargement of the tonsils is no indication for their removal and I am somewhat sceptical as to the part alleged to be played in the production of disease in the child by "septic tonsils" As far as I am concerned, probably the best evidence of tonsillar infection is afforded by recurring attacks of acute tonsillitis, in a child subject to such attacks I would be prepared to consent to tonsillectomy The removal of the tonsils for such conditions as recurrent colds, bronchitis bronchial asthma and acute rheumatism has given me such disappointing results that I always feel it my duty to point out to parents that tonsillectomy is by no means necessarily indicated in such conditions In the acute glomerulo nephritis of children when the disease has followed on an attack of tonsillitis I am of the opinion that tonsillectomy is of much value in any such case if hæmaturia should persist for some time say about six weeks then I would have no hesitation in advocating tonsillectomy

The next group of disorders I intend to discuss are those met with in the larynx or its neighbourhood; these are apt to produce difficulty in breathing, a difficulty which often results in stridor I think it will be convenient *if I take these conditions in relation* to the age of the child In the newly born there is the condition known as congenital laryngeal stridor, the infant has moderate inspiratory stridor, which is increased when he cries This condition, which is not so uncommon, dates from birth and disappears towards the end of the first year It is probably due to *lax aryteno epiglottidean folds* which *fall together* on inspiration and produce the "purring" inspiratory stridor, no treatment is required for this disorder Thymic asthma, due to an enlarged thymus pressing upon the trachea, is also alleged to occur in the first few weeks of life I have never seen an example of thymic asthma and I never expect to see one as I, myself, suspect that this condition is one only to be found in text books of pædiatrics If an enlarged thymus should ever produce respiratory obstruction a little consideration will show that the obstruction so produced ought to be noticed during expiration, giving expiratory stridor alone

From about the sixth month to the end of the second year of life one meets with the retropharyngeal abscess of infants and laryngismus stridulus The latter, characterised in the mild forms by a slight spasm of the larynx produces "crowing" or slight inspiratory stridor, in the severe forms there is a period of apnœa with or without cyanosis, which is *succeeded by an inspiratory whoop*, this disorder is a manifestation of tetany which in turn is a complication of rickets It is more important to recognise laryngismus stridulus not only because on occasions sudden death has occurred in an attack, but also because it is amenable to treatment by calcium salts, the rickets underlying the tetany must also be treated both promptly and energetically Retropharyngeal abscess in the infant may be confused with laryngeal diphtheria and in any infant with stridor a search is to be made to exclude a possible retropharyngeal abscess as the cause Such an abscess has an insidious onset, but when fully developed it produces stridor, dysphagia and extension of the head On examination a mass may be seen more often felt, on the posterior wall of the pharynx to one or other side of the middle line Treatment is to open the abscess, as soon as softening is apparent, with a guarded knife, immediately the incision is made the infant should be inverted in order to prevent any inhalation of pus

From the second to the fifth year of life catarrhal laryngeal spasm occurs It is very remarkable that this disorder, once one of the most common of children's complaints has become a rarity. I may briefly outline the clinical picture A child develops a slight cold with a ringing brassy cough Some time after being put to bed inspiratory stridor suddenly develops which passes off in an hour or so, on the following day the child appears to be well but an attack usually occurs again both on that night and the succeeding night Two points which I wish to emphasise are the suddenness of the stridor and the fact that during the day the child appears to be reasonably well these differentiate this condition from a *laryngeal diphtheria* Treatment consists in applying hot fomentations to the neck, a steam kettle powdered ipecacuanha in five- to ten-grain doses as an emetic, and a dose of some antispasmodic such as phenazone before the child goes to bed

I must now consider briefly diphtheritic and catarrhal laryngitis, both of which produce difficulty in breathing; both have a gradual onset, and unless membrane is visible on the fauces the differential diagnosis between the two is often impossible You will find in books various points enumerated to enable you to distinguish between them, but at the bedside you will often find it impossible to be sure. The attitude to be adopted is always to consider such cases to be diphtheritic and treat them as such with antitoxin unless you can prove them not to be so. In many cases even a negative throat swab would not deter me from giving antitoxin. Further causes of stridor are the inhalation of a foreign body and papillomata of the larynx; both these are uncommon, the latter particularly so.

Finally, with regard to this alarming symptom of stridor one may say in general that stridor during inspiration points to obstruction in the neighbourhood of the larynx, whilst expiratory stridor is suggestive of tracheal obstruction; in the latter case it is probable that tracheotomy will be of doubtful value I may add that although there may be evidence of respiratory obstruction in retraction of the lower ribs and recession of the sternum, the idea of a tracheotomy should not be entertained unless stridor is present.

SOME DIETETIC DILEMMAS IN GENERAL PRACTICE

(Dr. Thomas Hunt)

One of the most difficult dilemmas is that of the patient who can't eat anything. I refer of course especially to functional vomiting, nervous dyspepsia and anorexia, and vomiting of pregnancy, but the same situation may arise temporarily in such conditions as cardiospasm, carcinoma of the œsophagus, and pyloric obstruction The patient for example may be a young unmarried girl who has vomited intermittently for a long time and finally begins to vomit everything she takes Usually there is pretty considerable loss of weight, as of appetite She has very little pain, and clinical examination reveals nothing abnormal. If we press any special form of diet vomiting is likely to increase; if we withdraw all food there will be further loss of weight and still greater alarm of those around. For this state of affairs there are four remedies: (1) a good nurse and removal to hospital or nursing-home; (2) rectal feeding; (3) the stomach-tube or the threat of it; and (4) lastly but most important, the elucidation if possible of the psychological cause of the condition As a rule if all *fluid* and food is stopped by mouth for one, two, or three days the patient will soon tire of the régime; but water must be included in this veto, for the restriction of drinking will do much to force the patient to try to get back to normal diet.

During this time rectal feeding must be carried out The only things appreciably absorbed per rectum are water, salts, glucose, alcohol, and certain drugs So that if we order 8-oz salines every four hours containing 1 oz of glucose, ½ oz of brandy, and grs. 20 of bromide, we are supplying daily 2½ pints of water, about 1000 calories, and 2 drachms of sedative

Another serious dilemma connected with vomiting often arises after hæmatemesis Here we may be dealing with a desperate situation The patient has perhaps lost a lot of blood from a bleeding ulcer If we give him too much food he may bleed again; if we starve him too much he stands little chance of re-forming blood and regaining strength Of these two dangers the second is, in my opinio least as great as the first In spite of the ge optimistic view of the prognosis in hæmorrhage f peptic ulcer I am sure there is a considerable ri death from exhaustion, anæmia, and toxæmia f the altered blood in the intestine, if food is with too long The older the patient the greater is t risk and the shorter should be the period of star tion; for though the old are said to stand starva much better than the young, in my experience th stand anæmia plus starvation a good deal w Even if the hæmorrhage is repeated—as indee very often is—it is running a grave risk to starve patient longer than two to three days. In gen I think it wiser to give 2-oz. or 3-oz feeds, half and half water, at the end of 12 hours from the hæmorrhage than to persist longer with plain s water or albumin water. At least we can st add from the start lactose or glucose to the la up to ½ oz. per feed, unless the patient much di sweet drinks In one of the severest ca hæmatemesis I have seen the patient was inadverte given almost a normal diet, with chicken, pota bread and butter, pudding, and tea on the third d yet he never looked back and was fit for operation resection of a large gastric ulcer inside ten d On the other hand, I have known several die f recurrent hæmorrhage after it had been thought dangerous to give them anything but water. At E Meulengracht (1933) has reported on patients treated for hæmatemesis to whom he immediately a diet of tea, cocoa, bread and b porridge, meat, fish, eggs, vegetables, and Only 5 died, of whom 2 had carcinoma of the stom and 1 Banti's disease. I have not dared recom such revolutionary treatment, but I feel conv that the risk of giving milk, eggs, malted foods glucose quickly after gastric hæmorrhage is far than that of withholding food until the patie exhausted from hunger and starvation It is such starvation that mental symptoms and restle are so liable to develop.

If then we must choose between the risk of fur hæmorrhage and the risk of prolonged starv let us err on the side of risking further hæmorrh It is often during this period that we are warne the danger of transfusion, again because of the of provoking further hæmorrhage by raising blood pressure too high In my experience seldom happens, and indeed observation has s that the rise of pressure after a full transfusio rarely as much as 10 mm. Hg and seldom pe of itself more than 10–30 minutes The greater if there is one, is of œdema of the lungs follow transfusion given too quickly or in too large am but if one is faced with a patient desperately ill f hæmorrhage, there should be no hesitation in g the transfusion.

In less serious cases of nervous indigestion often have to decide whether to recommend a diet, with the assurance that discomfort is t ignored, or to rest the stomach and try gradua build up a diet by cautious addition of incre quantities and variety In deciding this one o most important factors is the length of history. rule only in the very recent case can we ho succeed by the first method. If the indigestion all long-standing there is apt to be a seco mucous gastric catarrh, and the stomach can o re-educated to take a full diet by the gradual re through cautious diet, of the indigestion habit

For this purpose diet along the lines emp for peptic ulcer is usually satisfactory. Here must aim particularly at being consistent egularity of feeds, small amounts at a time, but o sufficient caloric intake, are to be aimed at such cases malted food drinks, Benger's food, and e like are valuable, with the addition of cream, ucose, toast, and eggs to increase the energy value ften these patients are advised feeds like meat roths and extracts, but it must be remembered at nearly all these "meat juices" are of almost o energy value Their main constituent is common lt, together with some extractives, and they contain ardly any true protein or fat and no carbohydrate all If patients are only able to swallow a little s for instance in cardiospasm or carcinoma of the sophagus), let us at least give them fluid feeds concentrated as possible The white of one egg ntains as much protein as about three teaspoonfuls any meat extract and any number of teaspoonfuls of lves foot jelly—at anything from a quarter to a entieth of the price If we are faced with those fficult people who cannot take milky foods we n give them enough calories by using the white of ree eggs mixed in about 6 oz of water flavoured with mee Marmite, or Bovril, or they may take a puree getable soup to which we can easily add 3 oz of am and three teaspoonfuls of sugar and flavouring d thereby provide some 600 calories of energy me such substitute is very valuable to replace the nost valueless mutton and chicken broth so often red to the sick—especially by anxious parents

In the old, anorexia and vomiting may become very gent and serious symptoms Senile anorexia is t to follow the administration of drugs such as italis or salicylates or morphia and is best treated immediate cessation of all drugs by mouth one two days of rectal feeding, and the institution tiny feeds of 2 oz egg and milk every two hours hey can be taken Where even this is refused it y be necessary to give only occasional sips of water mouth and rely on rectal and if necessary intraous feeding with salines and glucose In many people almost any illness is liable to be associated h a psychological loss of appetite—and a refusal food in almost any form—even though they may lise the seriousness of their behaviour It is a k of any will to eat If there are any particular ividual items that the patient thinks she would e it is nearly always wise to gratify the inclination , not we must rely to a large extent on rectal feeding l trust that the appetite will return

Another common dietetic dilemma has to do with h blood pressure Here our problem is to estimate only the significance of the raised pressure but o the make up of the people who have it I say s because a large proportion of them are of the vous frightened type, and any form of treatment st take this into account As has been pointed out many observers the symptoms often found in ociation with a high blood pressure are strikingly those found in cases of anxiety neurosis—exhaus n, headache, poor appetite giddiness, insomnia re is also no doubt that many of the symptoms many patients with high blood pressure are in fact ely nervous and that any measure which increases m fear introspection, or anxiety tends both to rease the symptoms and to raise the pressure nce before insisting on any rigid dietary rules must carefully weigh up the nervous aspect of the and the effect that any prolonged restrictions have in fixing the patient's mind upon his condi , and increasing his anxiety And before we any strict dietary advice we must be sure that necessary and likely to be of real benefit

The two main things we have to consider are meat and alcohol Are we to eliminate all protein from his diet ? The restriction of meat to once a day is easily compatible with a cheerful outlook on a day's menus, and this is probably a wise injunction How it is cooked and whether it is red or white matters little except from the digestive point of view—and I know of no good evidence that red meat is actually more harmful in high blood pressure than white Cooked rabbit for instance contains slightly more protein than cooked beef and chicken almost exactly the same as beef or mutton though rather less than veal—which after all is only white meat because the animal has been bled to death instead of being killed outright Liver kidneys, and sweetbreads contain rather more nuclein (which forms uric acid) than other meats but not greatly increased amounts of extractives which indeed are rather diuretic than otherwise As for fish it mostly (except for salmon) contains rather less fat than meat, and some stomachs find it easier to digest , but it is quite erroneous to substitute it for meat with the idea of much reducing the protein intake. Moreover there is another important aspect of this question to be considered—namely, the undoubted effect on some people of a severely restricted animal protein diet in appearing to lessen their energy and spirits This depressant effect—psychological though it may be—is often to be seen in the prolonged treatment of peptic ulcer, where all meat is excluded and where definite deficiency symptoms occasionally arise in the form of neuritis skin changes and mental depression, these being akin to true pellagra which is almost certainly due to vitamin and amino acid deficiency A useful addition to the diet, where animal protein has to be much reduced, is a yeast preparation such as marmite, though its actual energy value is small

Yet another difficulty that arises is in the effect of obesity and flatulence upon the heart and blood pressure Many subjects of cardiac asthma and angina have their attacks provoked by distension of the stomach or splenic flexure with gas under the left diaphragm and many are much overweight In such cases flatulence is to be avoided, and if possible the weight should be reduced For these patients restriction of meat with free allowance of carbohydrates is contra indicated and it is better to treat the digestion than the blood pressure It is therefore wise to order a diet low in bread puddings starchy foods and roughage and to allow meat fish, and eggs in normal amounts Especially also to order small meals thorough mastication, and a reduced fluid intake with food Most of the post prandial distension which may be an important exciting factor of heart pain or dyspnœa is probably due either to failure of the pyloric end of the stomach to relax completely on the entrance of food so that the cardiac end becomes blown out with air or to frank air swallowing, or to undue carbohydrate fermentation in the colon Slowly eaten small dry meals are the best preventive of the former and a low cellulose and carbohydrate diet of the latter

In such flatulent patients meat is usually quite well taken and should be undercooked rather than overcooked , tea on the other hand has a very bad reputation for increasing distension and there is some evidence that it may retard digestion in the stomach and delay its emptying time According to experiments coffee is less of an offender and in practice it is often better tolerated than tea, but both of them are best if taken in small [illegible] *with* food On the other hand, a small quantity of wine seems often beneficial.

In flatulent constipated subjects we have this dilemma : if we increase the roughage and starches we increase their flatulence ; if we reduce it they will say we increase the constipation Actually there is less residue to be passed on a low roughage diet and we can safely reassure our patients that fewer actions of the bowels will not necessarily be of serious consequence and will be compensated for by the diminished production of gas in the colon

In general therefore let us diet our high blood pressure patients with our eye as much on their state of mind, digestion, and body-weight, as on the height of the pressure itself.

THE THERAPEUTIC VALUE OF GLUCOSE

(DR. E C. WARNER)

GLUCOSE is used so universally for so many different complaints that it is well to have in mind some of the main indications for it In therapeutics it has many valuable properties it is pleasing to take, in lemonade or otherwise ; it is readily absorbed, requiring no digestive activities ; it is readily stored in the body either for immediate use or for subsequent supply from the storehouse in the liver ; and in preparation for tissue metabolism, unlike fats and proteins, it makes no demand on the metabolic functions of the liver It is easily utilised by the tissues, and in general carbohydrate is the food which is first called upon for metabolic purposes Its last important property is its power to combat ketosis

Glucose may be administered either by itself or in association with insulin ; the latter tends to enhance its usefulness for it allows of greater storage in the liver and it may help subsequent metabolism as a whole Its main uses fall into five categories, as follows

Conditions associated with ketosis —In giving glucose in cases of diabetic coma with ketosis, there are several different schemes of treatment : for example, Dr. Lawrence advises giving 40 g. of glucose and 40 units of insulin and repeating half these quantities each two hours until consciousness returns We must not lose sight, however, of the value of other measures Perhaps the next most important is the administration of large doses of saline to combat the dehydration, and with this in mind F. B. Byrom has recently suggested that as soon as a severe case is seen, 50–100 units of insulin and a pint of normal saline should be administered very slowly by the intravenous route At the same time he advises that 500 g. of glucose should be dissolved in two litres of 0·45 per cent saline, and this should be given in 24-hourly doses by mouth, together with further insulin (10–20 units hourly) until the blood-sugar is normal

In surgical conditions too the use of antiketogenic measures may be of importance. From studies of the abdominal pain in cases of ketosis in children we have come to realise that there is a condition sometimes termed the "diabetic abdomen" A patient I have lately seen was a man with vague but severe pain in the right upper abdomen which could not be located to any organ ; there were no physical signs, and investigations had proved negative On routine examination it was found that he was passing considerable amounts of sugar and ketone bodies in the urine, and within a short time of instituting measures to combat the diabetes the abdominal pain disappeared completely Sometimes in these cases it is hard to make a differential diagnosis from an acute abdominal condition, and the difficulty is all t greater because both groups show a leucocyt Here it is wise to treat the patient with vigor antiketogenic measures for two or three h within which time a "diabetic abdomen" will h largely subsided

Cyclical vomiting is yet another example o condition which is frequently associated with ket It is quite true that there are other allied condit which do not necessarily manifest themselves in t form of vomiting, and perhaps it is better on t whole to give this group of cases the name of gly penia, meaning a probable deficiency of gly the liver We all are familiar with cases of the nervous child with poor muscle tone, who may ma fest the tendency in many different ways, rang from cyclical vomiting and cyclical diarrhoea t nocturnal enuresis The response to the adminis of extra sugar is often very striking, and the r in which these children will then start to put weight is equally pleasing. It is true that sugar any form is probably of equal benefit, but it is difficult to get it given regularly unless it is orde in the form of medicinal glucose.

Two other types of vomiting and ketosis wh respond to glucose therapy are hyperemesis g darum and post-anæsthetic vomiting. For the it has therefore been advised that 1–2 pints 10 per cent glucose should be administered venously in three divided doses and this should combined with 5–10 units of insulin t i.d. To com post-anæsthetic vomiting it is now a routine with most surgeons to give sufficient glucose be hand, but should the vomiting become pers in spite of this, the condition may be treated in same way as hyperemesis gravidarum.

Closely allied to these ketotic states are those are associated with *liver disease*. It is well the liver cells are protected by having a good of glycogen, and that in its absence toxins of kinds will lead to autolysis Protection of the with glycogen should therefore be sought in ranging from "acute yellow atrophy" or hepatitis of other kinds, such as that of ec or poisoning by chemicals, to the more chronic st of cirrhosis Richter has reported the use of of glucose t i d. (with or without insulin) and general this is the procedure which is usually ad Apart from its therapeutic value to the liver, relief of pruritus which this gives is often gr to the patient

In *allergic conditions* glucose has proved its v The milder cases of asthma in children often r completely to glucose therapy, although severe are much less prone to do so In general it allergic type which benefits most, but this is necessarily true and it is well worth trying it in case of juvenile asthma In adults asthma is not benefited Not long ago I had a case of a man who gave himself a pound to a pound and a of glucose a day, having read of its value in chil He temporarily cured his asthma, but unfortuna rendered himself a diabetic

The recurrent type of giant urticaria is ano allergic state which may respond very well My at tion to this was first called by seeing two chil with cyclical vomiting who had giant urticaria each of their attacks When glucose was given the cyclical vomiting the giant urticaria also sub but it recurred again when this was omitted then I have used glucose in children and in a in some ten cases of recurrent giant urticaria atifying results It is not necessary to administer continuously I think the best plan is to give an ounce of glucose three times a day for about a tnight, and then subsequently, if attacks tend to ur, 1 or 2 oz of glucose directly an attack reatens This will generally be found to abort it nally in infantile eczema we have another group allergic cases which has been reported by A A man as responding to glucose therapy

The fourth use of glucose, in combination with ulin, has been *to increase the weight* of patients simple *emaciation a gain in weight* will *often* sen the nervousness of patients and increase their istance Often the digestion is poor, and so the t that no digestive activity is required is of siderable value It is usual to give 5–10 units of ulin a quarter of an hour to twenty minutes before two chief meals of the day, and the lowering of od sugar which results stimulates hunger pains glucose is given in quantities of 1 oz after the ne meals it will not decrease the appetite and if s is persisted in over a period of weeks it is seldom ficult to get a considerable increase in weight A ilar régime is of value in primary thyrotoxicosis ere usually rather larger quantities of insulin h as 10 units increasing slowly to 20 units three es a day before meals, with glucose after meals, l have a similar effect This is of particular value acute post operative intoxication of the heart scle, when resort to intravenous glucose combined h insulin may tide the patient over a difficult period ain in rheumatoid arthritis where failure of trition is often an important factor F D Howitt l others have proved the advantage of this form herapy And yet again, in marasmus in children, the rk of H L Marriott in particular has shown how one two units of insulin twice daily, combined with 2 to z of 5 per cent glucose also twice daily administered necessary by intraperitoneal, subcutaneous, or intra ous methods, will often lead to gain in weight ich it has been very difficult to obtain otherwise n the acute forms of *heart disease* especially when ocarditis is a feature, the strength of the cardiac tractions is almost certainly increased and the eral condition of the heart muscle improved by cose and insulin therapy, and this treatment has n put on a sound basis by physiological research lucose can be given by almost any route By uth it is usually well tolerated and we can give rmous doses for L C Dodds has shown that mal people can tolerate and utilise nearly a pound lay without getting glycosuria Per rectum it is of the few drugs that is absorbed in ready fashion ravenously a 5 per cent solution is isotonic with blood plasma, and if given slowly a pint can ly be administered at a time Intraperitoneal dication has not been given the support it deserves has long been known that sterile glucose solutions somewhat irritant to the peritoneum but if the ose is sterilised in the dry state and added to rile water just before use irritant chemical comunds are no longer produced The subcutaneous te has not found favour, because of the slow orption of the sugar and the subsequent tendency nfection but it will sometimes permit the administion of small quantities of glucose to babies when ould be hard to give it in any other way

DONATIONS TO HOSPITALS —Mr L W Mayenstein, [illegible] recently wiped off the debt on the Middlesex spital with a cheque of £65 673 has now with a gift £5000 enabled the new Queen Victoria Cottage spital at Tonbridge to be opened free from debt

P R AT DENTAL BOARD ELECTIONS

ON Oct 2nd Mr C F Rilot, M R C S , L D S , and Mr J A Woods, M D S , took their seats at the Dental Board of the United Kingdom representing the 6332 qualified dentists practising in England and Wales At the election in June five candidates were duly nominated for the two seats Mr W R Ackland, M D S , Mr W H Dolamore M R C S , L.D.S , Mr W H Gilmour, M D S , Mr Rilot, and Mr Woods Sixty-four per cent. of the constituency voted and each voter had one transferable vote Mr. A. G Gray, an officer of the Proportional Representation Society, superintended the sorting and counting of voting papers

The valid voting papers were sorted and counted according to the first preferences recorded for each candidate, with the following result —

Rilot	1393
Woods	1186
Gilmour	470
Ackland	412
Dolamore	397
	3858

The quota, that is to say the number of votes sufficient to secure the election of a candidate, was 1287, and Mr Rilot, having secured a number of votes greater than the quota, was thereupon elected His surplus votes (100 in number) were transferred to the continuing candidates for whom the next available preferences had been recorded on valid papers recording a first preference for him, with the following result —

Woods	1276
Gilmour	474
Ackland	416
Dolamore	405
Retained for Rilot's quota	1287
	3858

No continuing candidate having obtained the quota, Mr Dolamore was excluded from the poll and his transferable papers were credited to the continuing candidates for whom second preferences had been recorded on them The result was as follows —

Woods	1369
Gilmour	566
Ackland	540
Retained for Rilot's quota	1287
Non transferable	87
	3858

Mr Woods, having at the end of this count secured a number of votes greater than the quota, was thereupon elected The details of procedure are shown in the following Table —

Number of valid votes, 3858 Number of members to be elected 2

$$\text{Quota} = \frac{3858}{3} + 1 = 1287$$

	1st count	2nd count		3rd count	
Names of candidates	Votes polled by each candidate	Transfer [illegible]	Result	Transfer of [illegible] of Dolamore	Result
Ackland	412	4	416	[illegible]	[illegible]
Dolamore	397	+ 8	405	−405	—
Gilmour	[illegible]	+ 4	474	[illegible]	[illegible]
Rilot	[illegible]	−100	[illegible]		[illegible]
Woods	1186		[illegible]	+ [illegible]	[illegible]
Non-transferable papers				+ [illegible]	[illegible]
Totals	[illegible]	—	[illegible]	—	[illegible]

[illegible]

SPECIAL ARTICLES

EPIDEMIC CATARRHAL JAUNDICE

NOTES ON A DEPARTMENTAL OUTBREAK

By H. H. Bashford, M.D., M.R.C.P. Lond.
CHIEF MEDICAL OFFICER, GENERAL POST OFFICE, LONDON

Various outbreaks of non-leptospiral epidemic jaundice have been recorded and investigated, both in this country and abroad, during the last few years; and a considerable literature has been assembled A group of village outbreaks in the Midlands was investigated in 1927 by M T. Morgan and H C Brown. Outbreaks in Surrey in 1928, 1930, and 1931 were reported upon by W. G. Booth and C C. Okell, and G. M. Findlay, J L Dunlop, and H C. Brown; in Yorkshire in 1930 by W N Pickles; and an extensive epidemic affecting three West Country schools was described in 1931 by J. A Glover and Joyce Wilson.

In all these epidemics the vast majority of patients were school-children, and recovery without any apparently remaining ill-results was the rule. Clinically there was a more or less constant preliminary stage of malaise or feeling of chill, often but not always associated with pyrexia, accompanied or followed by abdominal discomfort, nausea, vomiting, and the ultimate appearance of jaundice, with characteristic clay-coloured stools and dark pigmented urine. Recovery from the subsequent weakness was often slow but usually complete in from six weeks to two months after the onset of the complaint, and in many cases much sooner. In none of the outbreaks could any relation be established with responsible conditions affecting either foodstuffs or water; with infection from rodents, particularly the rat, associated with the severer, leptospiral form of jaundice known as Weil's disease, or with the organisms responsible for typhoid or paratyphoid fever, in which jaundice is sometimes a feature. On the other hand, no causal organism has been discovered, the means by which the infection is spread, if at all, from person to person has not been determined; and estimates of the probable incubation period have varied from three or four days to a month

It is for these reasons, and because it had certain features differing somewhat from those of previously recorded outbreaks, that the following notes of a recent departmental outbreak are perhaps worth reporting.

In the daily review of sick certificates submitted from so large a staff as that employed in the various great central departments of the General Post Office, catarrhal jaundice is not uncommonly met with; and it was not immediately evident, therefore, that we were in the presence of a definite if small epidemic. Towards the end of June, 1934, however, it became clear that an unusual number of such cases was being reported from one particular department, and ultimately, between June 18th, 1934, and July 18th, 1934, 48 cases occurred; 43 of them were members of a total staff of approximately 1900, employed in four different rooms, each upon a separate floor in the same building Two occurred in a departmental school in another part of London to which, however, the patients had been transferred from these rooms, on June 9th and 23rd respectively. Three occurred in employees not habitually using this building, but taking meals in its common dining-room

The accompanying Table shows the incide events. There would seem little doubt, ther

The Cases in Chronological Order

No	Initials.	Age	Date of sick absence.	Room and floor of employment	Occ.
1	Mr. F A	24	June 18	W. 3rd	9 d
2	Miss E M. .	20	„ 19	„	6
3	„ B M. A	26	„ 19	Y 1st	
4	„ E J .	17	„ 19	W 3rd.	7 d
5	„ K E .	25	„ 20	„	7
6	„ B H . .	16	„ 21	„	3
7	Mr W V. .	36	„ 21	Z 2nd	Nor
8	Miss J. M. . . .	17	„ 23	X 4th	8
9	„ A M . .	16	„ 25	W 3rd	4
10	„ E J	16	„ 25	„	4
11	„ J E . .	15	„ 25	„	7
12	Mr M . .	37	„ 25	X 4th	3
13	„ W N .	34	„ 25	„	Nor
14	Miss R A . .	24	„ 26	W. 3rd	4
15	„ M. A . .	16	„ 26.	„	3
16	„ C L	17	„ 28	X 4th	6
17	„ A R . .	17	„ 28	Dl S	4
18	„ J E . .	15	„ 29	W 3rd	6
19	Mr A T	32	„ 29	Z 2nd	4
20	„ H W. .	26	„ 29.	—	3
21	Miss P M .	22	„ 30	Y 1st.	Nor
22	„ J B .	17	„ 30	—	6 d
23	„ J. C . .	16	„ 30	—	No
24	„ D. M. .	16	July 2	X 4th	4 d
25	„ M J .	16	„ 2	W 3rd	7
26	„ R. .	16	„ 2	„	8
27	Mr S H.	17	„ 2	Z 2nd	Nor
28	Miss K M .	14	„ 2	W 3rd	4
29	„ E E . . .	21	„ 2	Y 1st	
30	„ M R . .	24	„ 2	„	
31	„ L R .	23	„ 2	„	4 d
32	„ S W .	15	„ 2	W 3rd	8
33	„ J E .	17	„ 3	„	Nor
34	„ V. G . . .	22	„ 3	X 4th	2nd
35	„ E E . .	16	„ 3	W 3rd	3 d
36	„ D M .	17	„ 3.	—	2nd
37	„ K W. .	14	„ 4	W 3rd	10 d
38	„ E. M. .	17	„ 4	X 4th	2
39	„ J A . .	25	„ 5	Y 1st.	4
40	„ S M	22	„ 6	„	
41	„ J J .	17	„ 6.	W 3rd	4 d
42	„ G M . .	17	„ 6	Dl S	No
43	„ C B . .	29	„ 6.	W 3rd	
44	„ J M .	17	„ 7	„	At
45	Mr. H W . .	25	„ 9	„	3 d
46	Miss M G . . .	16	„ 13.	„	3
47	„ A . .	22	„ 14	Y 1st	No
48	„ A	16	„ 18	W 3rd	

Dl S = Departmental school

REMARKS

No. 1—First felt ill on June 9th, but continued at w jaundice appeared on June 18th

No 4—Was taken ill while on holiday leave Had not to the office since June 11th Only contact occasional from Miss L. M (see reference in text)

No 17.—Transferred to school on June 23rd

No 20—A workman employed variously in all the rooms

Nos 22, 23, and 36—Not employed in the building, bu its common dining-room.

No 31.—Had been previously away ill from June 1 June 20th with a cold in the head

No 42—Transferred to school on June 9th Began ill on June 30th, but remained at work till July 6th.

that an epidemic of catarrhal jaundice had occurred No earlier cases have been traced appear to have any connexion with it No were reported during its incidence from any of large contiguous departments and buildings of General Post Office, and there has been no subse evidence, either in this department itself or of the others, of further cases of the same When it seemed clear that the epidemic progress, a careful inspection of the affected and of the common dining-room and kitchens made in conjunction with Dr. M T. Morgan, of Ministry of Health, who had investigated pre epidemics, but no responsible *per se* factor ventilation or sanitation of the rooms them or of the food or water used in the dining ıld be established, and indeed such factors seem have been eliminated in the investigation of earlier l similar epidemics Moreover, of the persons cted, 11 never used the dining room at all either nging their own food or taking their meals elsewhere, while 3 were not employed in the building l merely used its common dining room for their als Since the affected persons lived in widely ttered parts of London and its outlying suburbs was further considered advisable to inform the dical attendant of each of the probable nature of jaundice being suffered from, and subsequently h case was visited by a medical officer from head arters In no case, however, did any domestic ection occur either before or after the medical endants were so informed

Clinically the epidemic appeared to be little ferent from those previously recorded There a history of pyrexia in 8 of the cases and of tial chill and catarrh in 12, 9 complained of idaches, 16 of nausea, and 31 of vomiting In cases the urine had been noticed as exceptionally k, and in 38 cases clay-coloured stools had been erved Jaundice, more or less deep was present all All made a good eventual recovery

With regard to the incidence and possible incubation iod it will be seen that the first recorded case, F A, was on duty while feeling ill from he 9th to 18th, when jaundice appeared and he nt on sick leave, and it seems possible therefore, t during that time he may have been an uncon ous source of infection, and there were two days—, between June 9th and 11th—when Miss I J, king in the same large room, but in another and tant part of it, might have received, though only the most casual act of possible passing, some borne or droplet infection from this source Miss J, however, went on holiday leave on June 11th l did not become ill until the 19th the jaundice appearing till the 26th Her only contact with office between June 11th and 19th was in the asional visit to her of Miss L M, employed in building, but herself only occasionally entering of the affected rooms Miss L M who nained throughout in perfect health was examined l a nasopharyngeal swab was kindly reported on by Dr A Q Wells, of the clinical research artment, St Bartholomew's Hospital This ealed very few organisms, mostly Gram positive ci by direct film no spirochætes by dark ground diphtheria bacilli on serum slope, and an almost e growth on blood-agar of streptococci attributed the *salivarius* rather than the *pyogenes* group as result of subsequent tests Miss L M had n transferred to the departmental school above ntioned during the course of the outbreak but sequent to the occurrence of the two cases there, l no others occurred after her transference there less Miss L M is to be regarded, therefore as ving been a carrier though herself unaffected by epidemic, it would appear that the incubation iod in the case of Miss I J must have been at st eight days

Difficulty was experienced in obtaining stools, ne, and blood for bacteriological examination at appropriate periods But four specimens of ne and fæces were secured and six specimens of od which were kindly examined by Dr W M tt at the pathological laboratory of the Ministry Health No evidences of leptospiral or typhoid paratyphoid infection were found, and the only sible significant feature as regards the stools was presence in two of them of one particular serological type of Morgan's bacillus, which is probably pathogenic, but does not appear hitherto to have been associated with jaundice, and all the six blood specimens were found to agglutinate this It must be added, however, that 10 out of 20 apparently normal human sera were found to agglutinate this to almost the same extent

The serum from five of these bloods, which were kindly tested by Dr J Smith of the City Hospital, Aberdeen, gave negative results when Schuffner's test for agglutination of *Leptospira icterohæmorrhagiæ* and *L canicola* was applied

From an epidemiological standpoint the following points seem to be of interest The workers in only four rooms were affected, although there are many other rooms in the same building whose occupants would meet those of the affected rooms in lifts, corridors, and the dining and retiring rooms Nor did any of the sufferers convey the disease to their home circles On the other hand, no common responsible factor applicable to these rooms and the 48 sufferers could be isolated A person to person spread of the infection would seem to be the most probable explanation, but it could only have been the result, in at any rate a large number of the cases, of the most casual contact Nor could the infection, in view of the large number of possible victims have been other than of a relatively low degree of virulence It also seems probable that the period of personal infectivity was comparatively brief, and perhaps extremely so Finally the epidemic differs, to some extent, from most of those previously reported in having been wholly confined to adolescents and adults

I must add my thanks to Dr A T G Thomas, of the headquarters medical staff of the General Post Office, and to Dr W A R Mailer for their help in collecting and correlating the relative clinical data

MEDICINE AND THE LAW

Inquest Verdict as Evidence of Murder

The findings of a coroner's jury are not conclusive findings of facts for the purposes of other courts. A finding of negligence against a motorist for instance, if given at an inquest cannot be relied upon as an established cause of action for damages in a civil court And yet sometimes the High Court will act upon the verdict of a coroner's jury even where rights of property are in issue Thus a few weeks ago Mr Justice Clauson accepted the finding of a coroner's jury that a man named Sigsworth had murdered his mother and had afterwards committed suicide The question in the Chancery Division was whether the son could profit by the mother's will after having murdered her The son himself was dead, but there were legal representatives of the son whose claims were in question There was ample authority for the rule that the murderer could not profit by his own felony and could not pass to his legal representatives rights which he himself was not entitled to take The son had been entitled to the mother's residuary estate under her will If the son could not receive this bequest, the mother died intestate in respect of her residuary estate This raised another question for the court about which there was a doubt, could the murderer, though not entitled to property under his victim's will, nevertheless share in the victim's estate on an intestacy? Mr Justice Clauson decided that the same rule of public policy which would exclude the murderer in the one case must also exclude him in the other To go back for a moment to the admissibility in evidence of an inquest verdict, Mr. Justice Joyce seems to have been willing to accept the verdict of the coroner's jury as prima facie evidence of the fact of murder in *re* Houghton some 20 years ago. Earlier still, in the litigation arising out of the Rugeley poisoning cases the Master of the Rolls took the same course.

Murder for Gain

Palmer's poisonings at Rugeley—some 16 deaths were attributed to him—present a classic example of murder for profit. Apart from Cook's death, which brought him to the gallows, Palmer had insured his wife for £13,000. She died within three months of "bilious cholera." He insured his brother Walter for £13,000 after abortive proposals for as high a sum as £82,000. Walter Palmer died not long after. The insurance companies refused to pay on Walter's death and raised a defence fund. Eventually, when the policy came before the courts, it was declared fraudulent and void and the Master of the Rolls ordered it to be cancelled. Palmer's murders have reminded criminologists of the earlier series of poisonings by Wainewright, the art critic, who was transported for forgery in 1837. In 1828 Wainewright and his wife went to live with Griffiths, a bachelor uncle. The uncle died suddenly and the nephew inherited the property. Wainewright persuaded his mother-in-law and his two half-sisters to share the home. The mother-in-law, obstructive to his plans, died suddenly. He insured Helen Abercromby, his half-sister, for £5000 over a short period. She died suddenly within a few months The symptoms of all three deaths were similar Wainewright had to sue the insurance company for non-payment on Helen's death The jury disagreed but at a re-trial there was a verdict for the company. Wainewright, a whimsical fellow, is said to have tacitly admitted, while in Newgate, that he poisoned Helen—"she had such thick ankles"

The Case of Sidney Harry Fox

The most neatly timed murder for profit must surely be that committed in 1930 by Sidney Harry Fox, whose trial has lately been admirably edited by Miss Tennyson Jesse in the Notable British Trials series.[1] Like the dead man in the case lately before Mr. Justice Clauson, Fox murdered his mother He had no money; he had been obtaining cash by a bogus cheque which was likely to be brought home to him soon. He owed debts to several hotels where he and his mother had resided He insured his mother for £3000 which he would receive (as she had made a will in his favour) if she died a violent death before midnight on Oct. 23rd. She was not a strong woman. He put her to bed, at the Margate Hotel where they were staying, at 9 P M on Oct. 23rd, giving her some port wine He came down to the hotel bar for a drink and went upstairs again at 10.40, leaving himself 80 minutes if the death was to take place and be duly discovered before midnight so as to be within the insurance policy. At 11 20 he ran downstairs in his shirt, giving an alarm of fire His story was that he had been in bed and asleep when he was waked by a smell of smoke, he had opened the door of his mother's bedroom, found the room full of smoke, and—a fatal admission—closed the door again before running downstairs for help. There was a lighted gas stove in Mrs Fox's room and a fire had started on the carpet under a armchair but there was a strip of unburnt between stove and armchair. Sir Bernard Spil evidence, resisted by experts called for the de was that Mrs. Fox was dead before the fire cau smoke and that, in spite of the absence of such as the fracture of the hyoid bone, she had throttled to death No one in the hotel knew time that Fox was other than a good and dev son. But the alertness of the insurance officials to inquiries which ended in his prosecution conviction for murder. His is one of the rare where there was no appeal from the death sente Fox presumably had not foreseen the legal diffic raised by insurance companies in suspicious cir stances In litigation which followed another trial (the Maybrick case) Lord Justice Fry laid the rule of public policy that courts will not en rights asserted by a criminal and arising fro crime. As Lord Sumner said on another occasion, "a man shall not slay his benefactor thereby take his bounty."

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg Lts D Ewart to R M Infirmary, Deal, and Foster to *Victory* for R.N B.

ROYAL NAVAL VOLUNTEER RESERVE

Surg Lt A R Thomas to be Surg. Lt.-Comdr.

Proby. Surg. Sub-Lt. R. T. Jones confirmed as Sub-Lt

G. L. Foss entered as Proby. Surg. Lt. and atta List 1 of the Severn Division.

ROYAL ARMY MEDICAL CORPS

Capt de L Carey retires receiving a gratuity.

TERRITORIAL ARMY

Lt.-Col G. H. H. Waylen, M C, T.D., resigns his and retains his rank, with permission to wear the pres uniform.

Capt C M Bradley to be Maj.

Lts D J. Campbell and H R Cara to be Capt

University Candidates—2nd Lt. J. P R. Oake quishes his commn.

TERRITORIAL ARMY RESERVE OF OFFICERS

Lt-Col. F. G. Dobson, D S O, having attained the limit retires and retains his rank, with permission to the prescribed uniform

ROYAL AIR FORCE

Squadron Leader J B Gregor to Headquarters, R Far East, Singapore, for duty as Principal Me Officer.

Flight Lts C W. Coffey to R A F Base, G M T O'Reilly to R A F. Station, Mildenhall, and Everett to Station Headquarters, Heliopolis, Egypt

Flying Offr D R Crabb to R A F, General Ho Palestine and Transjordan

Dental Branch—Flying Offr. W V A. Denney to R General Hospital, Hinaidi, Iraq.

INDIAN MEDICAL SERVICE

Maj-General Sir Frank Connor, D S O, F.R C.S. been appointed hon surgeon to the King in succe Lt-Col G D Franklin, C I E, who has retired.

MEDICAL TOUR OF THE CÔTE D'AZ Société Médicale du Littoral Méditerranéen Franç once more arranged a tour of the Côte d'Az Christmas holidays This year the dates are Dec Jan 3rd Medical men and their families and of medicine are eligible, and further information *had from the secretary of the society at 24, Rue Ven*

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[1] Trial of Sidney Harry Fox. Edited by F Tennyson Jesse Edinburgh and London. Wm Hodge and Co, Ltd 1934 Pp 299. 10s. 6d

WILLIAM HARVEY'S CHURCH

AN appeal is made to the medical profession to scribe to the fund that has been open for more n a year having for its object the completion of new tower for Hempstead Church, Essex, where rvey's remains lie These remains are in a marble cophagus provided by the Royal College of ysicians of London to which they were transferred years ago to the Harvey vault

Hempstead Church is a fourteenth century building d the transactions of the Essex Archæological ciety record that the church and surrounding metery were consecrated in 1365 by the Bishop London, Simon of Sudbury The tower of the sent church collapsed in 1882, but its appearance fore the catastrophe is shown in the little illustration g 1), which is extracted from "Disciples of sculapius" by Sir Benjamin Ward Richardson n years ago a movement was set on foot to restore rebuild the tower, and local subscriptions to that d were made, but the time was inauspicious, and al generosity was not supported At the tertenary celebration of the publication of the Motu Cordis, held at the Royal College of Physins of London in 1928, it was felt that a memorial the founder of scientific medicine should take the m of the restoration of the church which harboured bones A committee was instituted by the College give effect to the strongly felt sentiment, a restoran fund was opened, and on July 7th 1933, the ndation stone of a new tower to Hempstead urch was laid by Lord Dawson The work was set hand in response to the first donations received d the reconstructed tower has now been built up to a point indicated by the line drawn across the tower on Fig 2 the illustration showing the structure as finished The first portion of the new tower built largely from the original stones, has been covered in, so as to render the building suitable for services and the completion now should certainly wait no longer

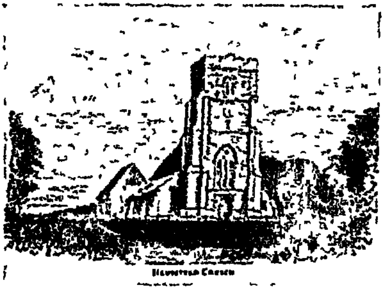

FIG 1

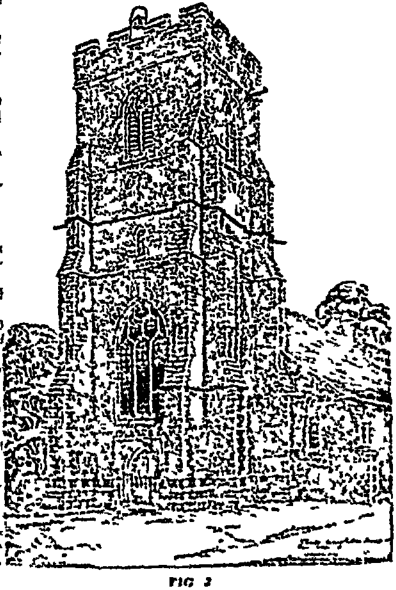

FIG 2

The present appearance of the structure *seems to convey a reproach* to us all from the *great dead* (Fig 3) Accor*dingly a fur*ther appeal for the sum of £2000 necessary to finish the work is made to the whole medical profession The members of the Harveian Society of London, to mark their centenary in 1931, instituted a special fund for the reconditioning and rehanging of the bells. These were originally five in number, but on the collapse of the tower one bell was hopelessly shattered

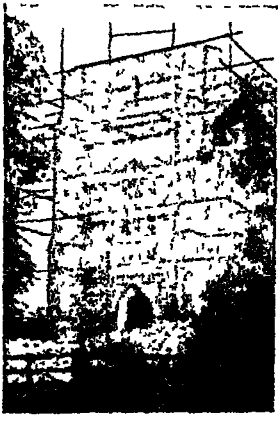

FIG 3

Donations are invited from all members of the medical *profession* and *should be made payable to* the Harvey Memorial Fund and sent to Dr G de Bec Turtle, Royal College of Physicians of London, Pall Mall East London S W 1

SURBITON'S NEW HOSPITAL.—Lord Ashcombe has laid the foundation-stone of a new hospital for Surbiton which is to cost £53,000 of which £27,000 had been raised when the building was begun

NURSES' HOME AT LEEDS GENERAL INFIRMARY.—A new wing is to be added and other improvements to made to the nurses' home at the infirmary The home will have 350 bedrooms and a large common room [illegible] the new block At present it is quite impossible to accommodate all the nurses in the home

PUBLIC HEALTH

The Quest for Sound Teeth

INQUIRIES were made last year in several areas into the circumstances of 12-year-old children who were found to have perfect dentition. Two counties where the research was attempted were East Sussex and Durham. The numbers are far too small to justify a conclusion—in Durham only 8 were found, in East Sussex 52—but they are suggestive.

	E Sussex.		Durham	
Children of the age of 12 and 14 years recorded with perfect dentition	52		8	
Brothers and sisters—				
(*a*) With perfect dentition	15		0	
(*b*) With evidence of caries	29		8	
(*c*) Children with no brothers and sisters .	8		0	
Fathers' (F) and Mothers' (M) teeth—	(F)	(M)	(F)	(M)
(*a*) Perfect . .	4	10	0	0
(*b*) Few decayed . .	14	10	3	1
(*c*) Many decayed	14	11	2	3
(*d*) No teeth .	0	2	2	1
(*e*) Complete dentures	13	18	0	2
(*f*) Dead or not known	7	1	1	1
General physique of child—				
(*a*) Good . .	31		7	
(*b*) Average .	20		1	
(*c*) Poor.	1		0	
Domestic circumstances—				
(*a*) Exceptionally good	12		0	
(*b*) Average	31		2	
(*c*) Poor .	0		6	
Care of teeth Brushing, &c —				
(*a*) Not brushed ..	17		5	
(*b*) Brushed night and morning	12		0	
(*c*) Brushed once a day ..	23		3	

As far as they go these figures suggest that heredity and affluence count for little and the toothbrush for not much more The diet in East Sussex cases is not set out in detail; in Durham four children ate few sweets, five had had cod-liver oil in early life, three much raw milk—one of them also porridge

Mr F W. Buzza, L D S (Yorks West Riding), says that experimental work on the structure of the teeth and their immunity to decay continues but the results he finds difficult to explain He accepts Mrs Mellanby's evidence of the overwhelming importance of vitamin D, he also accepts Mr Evelyn Sprawson's statement that the habitual use of unheated milk is a powerful factor in developing strong resistant teeth It has been proved over and over again, he remarks, that children in orphanages possess splendid teeth "A visit to an institution where children are reared reveals one circumstance which cannot fail to strike even the unobservant, each child's toilet accessories, face flannel, towel and toothbrush are in close proximity to the lavatory bowls and the use of a toothbrush is habitual. While dental salvation cannot be insured by a toothbrush, clean teeth have a much better chance of resisting decay than dirty ones In institutions too," he adds, "the food is plain and it is probable that each child gets more milk than children in private homes"

The superior dental conditions of institutional children is emphasised also in Cumberland where the chief dental officer, Mr F. E Gillieron, L D S, says that 50 per cent of the girls in St Cuthbert's Convent at Wigton were dentally fit In the instit boys at Englethwaite (public assistance) 62 pe have no dental caries, while in the average day in the county only 10 to 15 per cent are d fit The reason for the superiority is deemed not the use of the toothbrush, for that w strictly enforced in either institution, but reg of habits and a plain mixed diet of soup, meat, eggs, bread and butter, and fruit, without ex carbohydrates

In Wilts, too, it is reported that the children in the scattered homes compare fav with those of the children attending the elem schools This is the more remarkable whe recalled that many of the former must have from poor home conditions, since they wou have been admitted if the parents were able to look after them

In the elementary schools as a whole the n of children with "naturally" perfect teeth is small and great efforts are required to secure h mouths The work begins before the child is Dr W F J Whitley (Northumberland) says i report, "It is not sufficiently appreciated that m expended on the dental treatment of exp mothers and on school-children is a first-class ment and that the two are really interdepe It is of little use treating school-children unless antenatal attempt has been made to endow with a sound dentition." In Hampshire the c against the "appalling incidence of dental ca have a wide scope.—

1 The diet of the pregnant mother should c essentials for the promotion of the teeth of the dev child Medical officers at antenatal clinics have been and reminded to pay special attention to this po provision has been made for the diet to be imp through the guardians committees on direct req from the medical officers at the clinics Midwives been asked to pay special attention to the diet of w who engage their services.

2 The importance of breast-feeding is impressed o health visitors

3 At child welfare centres the dental officers e all the children, advise and treat the early cases of found A general talk is also given and the sale of brushes encouraged by stocking a cheap but r brand

4 At schools the dental surgeons give a talk of minutes' duration to the senior classes on the d inspection To make time for this talk the d charting of dental defects at school is not required.

5 Leaflets are distributed by the head teach leavers emphasising the need for continuous attent their teeth

6 Propaganda directed towards the taking of milk in schools should help towards better dentition.

On the top of all these measures comes the c servative work of the dentist. As Mr P Mil L D S (Norfolk), says, "to be expected to repair in a mouth which will afterwards be neglecte naturally disheartening to the dentist," and Mr R Townend, L D S. (Yorks West Riding), note tremendous variation in the durability of f which he thinks depends not so much on the char of the dentist's work as on the hygiene of the m and the structure of the tooth

The weakest part of any filling is the margin if this is not kept clean and free from carbohyd fresh caries will commence there, enlarging cavity and allowing the filling to become loose filling is but a patch and a patch put on a ial may have the result that the rent is made

many areas attention is being more and more ed on conservative work, Dr A H Wood wickshire) states —

he voluntary character of all school dental schemes treatment to those of the children who accept the es of the school dental surgeon and experience has that in the past many children have failed to take tage of the scheme until they were approaching leaving age, by which time the required repair ecome so extensive, necessitating much time and o on the part of the school dental surgeons before ent is completed In order to overcome this difficulty lucation committee have revised the dental scheme view to encouraging acceptance of treatment in rly years of school life, providing at the same time l reinspection and the offer of any further treatment ed for those who have entered the scheme before e of 9 years Treatment will thus be concentrated on who are anxious and willing to accept conservative ent, who will then go through their school life with is free from caries, and will reap their reward in a healthier and happier adult life "

ifficulty noted in many districts is the opposition rents to conservative work—all they appreciate need for extraction of a tooth which aches arwickshire Mr A Topping, L D S has met parents who accept dental treatment for their en only with the stipulation that no filling tions are carried out It would be difficult, inks to apportion between child and parent the nsibility for this obstruction to conservative nent, but under the new scheme to be instituted ifficulty will be avoided

the rural areas the use of a dental van has been of value Mr R R Maclean L D S (Notts) that the trailer dental van has again proved alue and further experience has not revealed unsuspected disadvantages It has been the s of creating a sustained interest in the dental amongst parents, teachers, and scholars In Mr L S Kench L D S, regards the introduc- f a dental trailer as the most outstanding event year Faults and difficulties have arisen but have been overcome In Leicestershire the use h a van has proved impracticable owing to the ulty of finding a suitable place for it near the l premises

the results of dental schemes as a whole there ference of opinion Medical officers of health me counties—e g Gloucester—report steady vement, others regret that affairs are worse han they were In nearly all these latter areas is insufficient staff

Tuberculosis in Lancashire

county of Lancaster has a flair for istration and knows it The report of the central culosis officer always contains evidence of nistrative difficulties surmounted or indeed ipated The county is a big one and the scheme s a million acres with a population of more than 000 and an annual expenditure of nearly 000 There are 24 tuberculosis dispensaries 7 536 definite cases on the registers and the ge number of occupied beds is 914 The success h a scheme as Dr Lissant Cox well knows ds primarily on cordial relations with the al practitioners in the county and he tells us 60 per cent of new cases were sent *before notifi*, to the tuberculosis officers for an opinion as to osis The death rate from pulmonary tubercu was slightly higher last year than in 1932 when it was the lowest on record, but a similar small rise was general throughout the country, due no doubt to the influenza epidemic early in the year The death rate from non pulmonary tuberculosis has fallen continuously Taking both together, Dr Cox estimates the saving of human life in the county, owing to the improvement between 1914 and 1933 at 909 lives last year The group which has shown least response to treatment is the female age group 15 to 25 years, but even here the death rate is well below the rate for 1912–14

Dr Cox insists on the value of a dispensary unit of a certain size, serving not less than a population of 200 000 rural or 300 000 urban Such an area can be managed by a team of one whole time tuberculosis officer, with one or two medical assistants, four to six nurses or health visitors, and one or two clerks to keep records prepare reports, and do routine correspondence We *stand or fall* he says, *on the skilful* application of special expert methods of diagnosis and treatment A proper X ray plant costs £600 and a dispensary also requires room for artificial pneumothorax refills hence the chief dispensary of a unit must be bigger than heretofore thought necessary Many areas are suffering from too small buildings and he would like the Ministry of Health "with immense courage" to publish a black list of units inadequately equipped He is equally sure about the need for unity between the dispensary and the institutional unit It is, he says just as absurd for a tuberculosis officer to have no beds at a sanatorium or hospital as for a consultant physician to have no beds, and he illustrates the disunity of the two sides of tuberculosis work by *pointing to the arrangements in* London where two separate authorities control the two sides

Some of the results of efficient administration peep out from Dr Cox's report It has for instance been his policy to remove from the register as recovered patients who have remained quiescent under supervision for three to five years A table in the report shows that 96 6 per cent of those written off as recovered did not return to the dispensary Large sums of public money, he remarks are saved by the dispensary staff not having to supervise and examine periodically several thousand patients throughout the remainder of the patients lives It is also the practice of Lancashire to provide no more than one sanatorium bed for every 7360 of the child population 0 to 15 years and the conservative standard of diagnosis appears to be justified by the after results for of 3556 young adults who came on the dispensary registers as definite cases of tuberculosis in the period 1927 to 1933 (and who could therefore have been seen as children in or after 1913) only 30 had been rejected in childhood as not suffering from pulmonary tuberculosis Artificial pneumothorax treatment now plays a large part in the scheme About 15 per cent of all cases entering the sanatoria and hospitals commence it during institutional treatment many continue it at the dispensaries after they leave A survey by Dr F C S Bradbury of [illegible] cases induced at a pulmonary hospital shows results better by 15 to 30 per cent than carefully matched controls who did not have the treatment The controls were selected from contemporary patients of the same age sex sputum content and radiological appearance Dr Heaf's [illegible] estimate of the extent of lung involvement has been corroborated by Dr C W Laird medical superintendent of the hospital The report contains an account by Dr [illegible] Jessel on [illegible] at the [illegible] Dispensary confirming the results [illegible] three years ago [illegible] own columns (1931, i [illegible]) The results Dr

Jessel concludes, after actinotherapy combined with ancillary forms of treatment, are superior to those after operation—and the cost is much less than if residential treatment had been provided

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 20TH, 1934

Notifications—The following cases of infectious disease were notified during the week · Small-pox, 0 ; scarlet fever, 3327 ; diphtheria, 1560 , enteric fever, 17 ; acute pneumonia (primary or influenzal), 538 ; puerperal fever, 58 ; puerperal pyrexia, 110 ; cerebro-spinal fever, 17 ; acute poliomyelitis, 30 ; acute polio-encephalitis, 1 ; encephalitis lethargica, 5 ; dysentery, 15 ; ophthalmia neonatorum, 84. No case of cholera, plague or typhus fever was notified during the week

The number of cases in the Infectious Hospitals of the London County Council on Oct 29th–30th was as follows Small-pox, 0 , scarlet fever, 1897 , diphtheria, 1853 , measles 191 ; whooping-cough, 180 , puerperal fever, 26 mothers (plus 14 babies) , encephalitis lethargica, 269 , poliomyelitis, 9 , “ other diseases,” 302. At St Margaret's Hospital there were 18 babies (plus 11 mothers) with ophthalmia neonatorum

Deaths.—In 121 great towns, including London, there was no death from small-pox or measles, 1 (0) from enteric fever, 5 (0) from scarlet fever, 6 (3) from whooping cough, 47 (14) from diphtheria, 57 (13) from diarrhœa and enteritis under two years, and 13 (2) from influenza The figures in parentheses are those for London itself

It must be a long time since a week was free from a fatal case of measles Liverpool reported 4 of the deaths from diphtheria, West Ham and Leeds each 3, Bootle, Huddersfield, Hull, Salford, Cardiff each 2 Of the deaths from diarrhœa, 8 occurred at Liverpool, 4 at Leeds and Birmingham, 3 each at Portsmouth, Sunderland, and Leicester

The number of stillbirths notified during the week was 274 (corresponding to a rate of 45 per 1000 total births), including 41 in London.

THE LONDON MEDICAL EXHIBITION

We conclude in this issue an account of the medical exhibition organised by the British and Colonial Druggist, Ltd., who were also responsible for the great exhibition at the seventeenth International Congress of Medicine The new hall of the Royal Horticultural Society in Greycoat-street, Westminster, gives ample space and an excellent setting for an exhibition of this kind Open as it was from 11 A M to 6 30 P M. for five consecutive days sufficient opportunity was given for attendance at convenient times by all those towhom the exhibition was expected to appeal. Numbers of new preparations and improved formulæ were shown in the pharmaceutical section, and the steady development of surgical craft was evident from the variety of instruments and appliances of all kinds There were in all nearly 170 exhibitors and the attendance was larger than on any previous occasion A similar exhibition will be held in Glasgow next May

Books

(21, 22) Baillière, Tindall and Cox (7 and 8, Henrietta-street, W C.) showed a number of their own publications and, in addition, those issued by a dozen other firms. They drew special attention to . “ Modern Treatment in General Practice,” by Cecil P. G. Wakeley ; Green's “ Manual of Pathology,” revised by H. W. C. Vines ; “ Surgery of the Sympathetic Nervous System,” by Prof. G. E Gask and J. Paterson Ross ; and “ Principles of Gynæcology,” by W. Blair-Bell.—(20) William Heinemann, Ltd. (99, Great Russell-street, W.C.), exhibited a range of books on medicine and surgery, notably Cox's
“ Clinical Contraception ” ; Halls Dally's
Blood Pressure ” ; Clendening's “ Behind
Doctor ” ; and McDowall's “ Science of Sign
Symptoms.”—(32, 40, 41) H K. Lewis and Co,
(136 and 140, Gower-street, W.C.), had a repre
tive selection of works of many publishers as w
their own, and specimens of osteology and anato
models ; they pointed out particularly “R
Progress in Medicine and Surgery,” edited b
John Collie ; Roxburgh, “ Common Skin Disea
Ellman, “ Chest Disease ” ; Ray, “ Rheumatis
General Practice ” ; and Hamilton Bailey and R
McNeill Love, “ A Short Practice of Surgery ”
their medical stationery stand they showed
card index systems of book-keeping and case-ta
hand-painted shields, Dr. Ellman's new stamp
lungs and heart, and a handy loose-leaf pocket
constituting a portable card index system for
notes.—(76) The Medical Press and Circ
(8, Henrietta-street, W.C.) reminded practitione
their practical journal and their series of articl
modern treatment in general practice, as we
their quarterly symposia and special numbers
endeavour to give the latest knowledge in a co
authoritative form applicable to general practi
(25) Oxford University Press (Amen H
Warwick-square, E.C.) showed their own book
those of various American universities, and
as of special interest · Kretschmer, “ Text
Medical Psychology ” ; Parsons and Barling, “
and Childhood ” ; Platt, “ Nephritis ” ; V
“ The Anæmias ” ; H. Wright, “ Essentials
Feeding ” ; S. Wright, “ Applied Physi
(156) The Practitioner (6–8, Bouverie-st
had recent issues on view, notably the
Special Number of recent advances in t
and pointed out to inquirers that two special
were published each year, and that the
issues generally contained symposia on su
interest to the doctor.—(98) John Wri
Sons, Ltd. (Bristol), displayed their pu
and pointed out a new “ Atlas of Comm
Diseases ” by Semon and Moritz, in which t
trations are actual coloured photographs tak
from the subject and not from the model.
reminded visitors that they are the publishers
Medical Annual —(15) The Lancet, 7, Adam
Adelphi, W C., showed the volumes in which
of articles have been collected in book form, of
the most recent is “ The Preventive Aspec
Medicine ” ; and medical books published by M
Hodder and Stoughton

Spas and Miscellaneous

(60) Bath illustrated its establishment and
minded visitors of the varied forms of th
available, particularly recommending the sprin
spondylitis, and introducing the new thermal
treatment cabinet.—(39) Buxton drew special
tion to a new rheumatism clinic which is to open
year and to provide board, spa treatment
specialist advice as required for persons of mod
means at an inclusive charge of three guineas
week —(152) Harrogate emphasised their
amenity ; an arrangement for regulating the
of patients. The practitioner is supplied with
sheets, and can enter quantity or comments,
copy is then given to the patient and another
hotel-keeper, who undertakes to supply the
ordered.

(53, 54) Domen Belts Co , Ltd (67, We
street, W.), showed a new abdominal supp
which the principal feature is a pair of bands c
several times and simply adjusted by a pair of
at the front of the belt , there is a single fa
behind consisting of three hooks. They also ex
a variety of other garments designed to contr
figure —(9) The Gas Light and Coke Co (Hor
road, S W.) exhibited some of their latest appl
notably the High Beam fire, which is said t
more efficient than older models ; coloured

in a range of paints to match any room, and self-ng water heaters for surgery basins and sinks — KOLYNOS INCORPORATED (Chenies-street, W C) a new shaving cream to show, in addition to r dental cream and mouth wash — (19) THE DICAL AGENCY, LIMITED (Dudley House 36-38, thampton-street, W C), were again present to rm doctors of the valuable services which they can obtain in such matters as locum tenens, assistants, medical accountancy of all kinds, loans and insurance (161) MEDICAL SICKNESS ANNUITY AND LIFE ASSURANCE SOCIETY, LTD (300, High Holborn, W C), had a stand to remind practitioners of the Society founded by medical men and conducted solely for their benefit, providing all forms of sickness, accident, life and pension insurance and loan schemes

OBITUARY

SIR HAVELOCK CHARLES, G C V O, M D Q U I, F R C S I

ON GENERAL, I M S, HON SERJEANT SURGEON TO THE KING

ur death occurred on Saturday last of Sir Havelock rles, a distinguished officer in the Indian Medical vice and an earnest worker in the cause of tropical licine

avelock Henry Richard Charles was the son of D H Charles, of Cookstown, Tyrone and received medical education at Queen's College Cork He luated as M D Q U I in 1881 with first class honours, gaining the gold medal for medicine and after postgraduate study at various centres on the continent, entered the Indian Medical Service He took the first place in the competitive examination and while at Netley gained the Herbert Prize the Montefiore Prize and the Parkes Medal As was natural after so successful a career as a student he soon obtained special employment, and from 1884 was for two years in part medical charge of the tort and Field Hospital which accompanied the han Boundary Commission, the medical responsi ies thus incurred he afterwards described in a k There followed now important teaching appoint nts in connexion with the I M S He was consecu ely professor of surgery and anatomy in the medical eges of Lahore and Calcutta, and surgeon to the o Hospital in Lahore. In 1905 his close connexion h the Court commenced for he accompanied the nt King and Queen then Prince and Princess of les on their Indian tour at the conclusion of ch he was appointed K C V O In 1908 he retired n the Service with a pension

n his return to England he immediately began to an active interest in the development of tropical licine the importance of which to the Empire had n growing more generally obvious In 1910 he ame dean of the London School of Tropical licine, and at the same time he presided over the tings of the Royal Society of Tropical Medicine Hygiene In 1910 he was appointed Serjeant geon to the King and in 1911 12 he accompanied King and Queen when they revisited India On return from India he was promoted G C V O and ted Honorary Surgeon General At the same time he was appointed president of the medical board of the India Office, a post which he held until 1923, being at the same time medical adviser to the Secretary of State for India In 1923 he was created K C S I, and a baronet in 1928 On his resignation in 1928 of the post of Serjeant Surgeon to the King, he was made Honorary Serjeant-Surgeon, a new and personal appointment He received many academic distinctions in addition to those from the Crown In 1906 he was awarded the honorary medal of the Royal College of Surgeons of England and in the following year the Arnott medal He was given the honorary degree of LL D at Queen's University, Belfast, and was made an honorary F R C S Irel He was not a profuse writer, but he contributed to the medical journals the *Journal of Anatomy and Physiology,* and the *Journal of the Asiatic Society,* papers on anatomy, surgery and anthropology, and he wrote memoirs of his brother officers in the *Indian Medical Gazette* He was a Visitor of King Edward's Hospital Fund for London, a Knight of Justice in the Order of St John of Jerusalem

SIR HAVELOCK CHARLES

[Photograph by Elliott & Fry

Sir Havelock Charles who had been a widower for ten years, married in 1886 Gertrude, daughter of the late Adam Gordon of Aberdeen, by whom he had two sons, who survive him

We owe to Sir Leonard Rogers the following tribute "In Sir Richard Havelock Charles the Indian Medical Service has lost its most distinguished member He was a marked man from the time he entered the Service as a gold medallist and at the head of his batch during a time of keen competition In his second year in India he was appointed surgeon to the Afghan Boundary Commission and not very long after he was made professor of anatomy and surgery at the Lahore Medical College Here his ability and enthusiasm resulted in the complete reorganisation of the department to become the first of its kind in India, and at the same time he did much original research work on differences between the skeletons of Europeans and Indians which had important medico legal applications both in criminology and anthropology So outstanding was this work that when a vacancy occurred in a similar post in the Calcutta Medical College the Government of India appointed him to it, one of the very few occasions in which an I M S officer of another province was appointed to a Calcutta medical professorship Here he was equally successful in reorganising the teaching of anatomy, while he also proved to be an up to-date and successful surgeon, and on promotion to the professorship, an excellent teacher in that subject As first surgeon to the hospital he was particularly successful in operations for elephantiasis of the scrotum and effected important improvements more particularly in primary skin grafting to restore the functions of the male organ He also obtained comparatively good results with the open operation for liver abscesses then in general use and later he stressed the importance of the surgeon himself doing the early dressings to minimise the dangers of secondary septic infections in the humid germ-laden Bengal climate His great abilities and energy, added by the gradual retirement of his more senior colleagues, enabled him to build up an extensive private practice

"When the Prince and Princess of Wales went to India in 1905–1906 Sir Havelock was the obvious choice for surgeon, and in 1911 he returned to India with them when they had become King and Queen, and retained Their Majesties' confidence when he was Serjeant-Surgeon to the King He retired in 1908 at an early age to the great loss of surgery in India, but he now entered on an equally successful administrative career as successively member and president of the Medical Board, and during the war in the new post of medical adviser to the Secretary of State This was the late E. S. Montagu, whose confidence in Havelock Charles enabled Charles to obtain the important increases of pay, and the retiring gratuities at the end of six and twelve years' service respectively, that were necessary to continue to attract recruits for the I M S in view of the uncertainties as to prospects accompanying the grant of increased political power to Indians In 1928 he retired from the India Office under the age rules full of honours, and with a record of good service probably only second to that of Sir Joseph Fayrer in the whole history of the I M S. Sir Havelock combined with exceptional ability high ideals and great strength of character; these made him a doughty opponent, but also a loyal and powerful friend who was ever ready to help any whom he deemed to be deserving of it. We shall not soon see his like again."

DAVID ROGER MOIR, M.B., Ch.B. Aberd.

Born in Dundee Dr David Roger Moir was educated at the University of Aberdeen, where he graduated in arts in 1893, taking the degrees of M.B , Ch B. in 1898. After holding junior appointments in Aberdeen, he settled in practice at Hull and later became surgeon to the Hull and Sculcoates Dispensary He conducted a large practice skilfully, was president of the Hull Medical Association, and outside his strictly professional duties devoted a good deal of time to the work of the St. John Ambulance Association He acted as medical officer in many compensation cases arising out of injuries received in the docks, and after the war was a particularly useful examiner for the Ministry of Pensions of disabled men Here those whom he examined were grateful for the sympathetic discharge of his responsibilities towards the country and themselves He was an active member of the board of management of the Hull Royal Infirmary and had been president of the Hull and East Yorkshire Division of the B M A. His death has deprived Hull of a valuable citizen

FREDERIC VIVIAN BEVAN-BROWN, M.D.Lond., M.R.C.P.

We have learnt from a correspondent of the death of Dr. Frederic Bevan-Brown which occurred at his home in Christchurch, New Zealand. It is an untimely event and a career of good performance and high promise has been unduly terminated He was born in 1888, the son of the headmaster of Christchurch High School, and after some preliminary medical study in that city came to England and entered Guy's Hospital as a medical student From the beginning he showed his quality. He acquired the English double diploma in 1913 and three years later graduated at the University of London as M D , B S. It was now the middle term of the war, and Bevan joined up immediately with the R.A M C, saw in Mesopotamia and on the Western Front, remained at his military duties until the arm On the cessation of hostilities he returned to Hospital and held various house appointme gained in 1920 the diploma of M R C.P. Lond proceeded to the doctor's degree He then re to New Zealand, acquired at the University of Zealand the degrees of M.B., Ch B , and was app a physician to the Christchurch Hospital. He did admirable clinical and teaching service addition to written contributions upon medical topics wrote suggestively upon the r between the psychic and the physical sides of He was deeply interested in the religious asp his calling and was appointed Lay Canon to C church Cathedral The community not o Christchurch but in all New Zealand have l Dr. Bevan-Brown a valuable member

BRERETON GEORGE ELLIOTT, L.R.C.P.

Dr. Brereton Elliott, whose death was ann recently, was resident medical officer at the Fa Sanatorium, Liverpool The son of a cler at Armagh, he qualified for the double Irish d in 1890 and practised for a time at Cherry Tr at Whitton, near Blackburn, where he was pro in founding the Blackburn Division of the St Ambulance Association He also held a comm in the East Lancashire Volunteers, and on the break of war accompanied this regiment, now East Lancashire Territorials, to Egypt and as a combatant officer there and in Gallipoli. H promoted major, and was later appointed to com a military hospital in Egypt Shortly after his to this country he became resident medical at the Fazakerley Sanatorium, the position he held at his untimely death He had s considerably from the strain of the war.

JAMES CRAWFORD CRAIG, M.B., Ch B., D

Dr James Craig, whose death we re announced, received his medical education at U sity College, London, and the University of Edin He decided, rather later than usual, to enter medical profession, and was already a gradu arts at his University when he became a me student He made his mark at once, holding the of bursary in pathology in 1907 and graduati M B , Ch B with honours in 1908 He serv house surgeon at the Royal Maternity and Si Memorial Hospital in Edinburgh and was for a period clinical assistant to the Central London Nose, and Throat Hospital He now came to Lo and obtained the D P H diploma of the E Colleges and *went into general practice*, at the time acting as surgeon to the Royal Bucks Ho at Aylesbury, and taking special interest in der logy. Dr Craig was a thoroughly well equ practitioner and his loss will be felt by many pat

INSTITUTE OF MEDICAL PSYCHOLOGY —Dr. Le Seif, of Munich, will give a course of three e lectures at the institute (Malet-place, London, W on Nov. 20th, 23rd, and 26th, on the principl practice of individual psychology The course has arranged by *the* Child Guidance Council for memb clinic staffs and others interested and the lectur take place at 8 30 P M.

CORRESPONDENCE

INCAPACITY CAUSED BY MINERS' NYSTAGMUS

To the Editor of THE LANCET

,—One day when the members of the committee nted by the Medical Research Council to tigate miners' nystagmus were discussing some es and graphs, produced by Dr T L Llewellyn, ing very clearly the close inter-relation between cidence of incapacity from nystagmus and the ent of lump sums and other moneys for it (see rt No 1), the late W H Rivers suddenly rked, "the facts seem clear enough and that s miners' nystagmus into the same category as y spine, both are cured by the payment of y" This remark made me reconsider my own on on this subject Anyone who has examined o number of miners who are working in spite of g nystagmus, and an equal number who have l work on account of it, will be in a position to ciate the remark

ny miners are now living on small weekly sums ns compensation, instead of being able to work arn full wages They have become neurasthenic, ecause their eyes are moving but because having "indisposed," they have been advised to 'go on ensation" for nystagmus Once in receipt of a y payment, worry begins How long will the ent last? When will it be safe to stop drawing esume work? Will work then be available? If reekly payment is reduced in amount as for il incapacity, the worry is accentuated They at home, they brood and they mope they no r mix with their fellow men they become sthenic Why? Not because they have gmus but because of the delays and uncertainties system of compensation as it prevails in this ry What is the remedy? A definite time should be placed, by statutory order on the ent of compensation for total incapacity nths, for partial incapacity 12 or at most onths from the day of stopping work After o fresh claim to be valid until another year has spent below ground Work is the best means eventing neurasthenia, in my opinion the s would gain far more by this than the owners l

rking in insufficient light is I firmly believe the nd only cause of nystagmus in miners Experi lly it is hard to produce direct proof of this as g an exposure is required Such proof as there obtained from statistics and by the elimination her causes A chart recording the relative nse of the dark adapted retina to a series of ated minimal stimuli by light, just as the chart hydrographer records the relative depths of cean, would give valuable information This l require —

A dark room, as nearly absolutely dark as possible

A self recording perimeter with a small spike at the d the fixation point on which the observer could the tip of his index finger in the dark and fix it accurately enough thus avoiding the use of more no light, no light being required at the point of n

A light or lighted spot the illumination of which varied and the volume of light and of each variation curately measured this would involve the measuring out one millionth part of a foot candle ; this light have to be attached to the mobile carrier on the the perimeter, then a chart could be made recording the response to light, so faint that it could only just be distinguished against a black background and to other slightly brighter lights until even the least responsive parts of the retina had been stimulated

If, when obtained, the chart shows that the most sensitive part of the retina, in extreme dark adaptation, is roughly circular in outline then it would confirm the theory that rotation of the eyes takes place so that a fresh spot on the retina is substituted for a fatigued one —I am, Sir, yours faithfully

Oct 23rd G H POOLEY

ACRIFLAVINE FOR SCHISTOSOMIASIS

To the Editor of THE LANCET

SIR —Prof Khalil Bey unintentionally misquotes my note of April 28th when he cites me as having claimed a cure for 30 out of 52 cases of schistosomiasis treated with acriflavine As, at that time, none of my cases had been under observation more than a few weeks I was at pains to avoid any claim as to "cure" Now that it has been possible to keep 34 of these cases under observation for a period of three to six months the question of cure can be considered The follow up showed reappearance of ova in the fæces in half the cases within three months The remaining 50 per cent were free from symptoms and from ova in the excreta three to six months after treatment, and it seems justifiable to class this group as cured The majority of these cases were heavy infestations. In face of even such modest results as these the failure of acriflavine in the very thorough trial carried out by the Cairo workers is the more puzzling That the susceptibility of the parasites differs in the two experiments would provide a possible explanation but for the fact that Dr H Moneim el Diwany (in your issue of Sept 8th) has apparently met with success in treating schistosomiasis in Egypt with acriflavine

I am, Sir, yours faithfully,

Loughton, Essex Oct. 24th A C FISHER

POLYCYTHÆMIA AND THROMBOPHILIA

To the Editor of THE LANCET

SIR,—In a recent paper under the heading Erythræmia, with Migraine, Gout and Intracardiac Thrombosis (THE LANCET, Oct 13th p 808) I described a case in which there had been old thrombotic occlusion of the splenic artery and in which afterwards cardiac thrombosis and mesenteric thrombosis (I was not sure if mesenteric embolism could be excluded) occurred I mentioned that the abundance of the megakaryocytes in the bone marrow might be correlated with the high thrombocyte count in the blood a few days before death I knew of course of the occasional association of arterial thromboses as a main feature in some cases of erythræmia which I had first become acquainted with through the case published by R Hutchison and C H Miller in your own columns (THE LANCET 1906, i 749) but I was not aware of a quite recent elaborate article by H Lüdeke on 'Thrombophilia and Polycythæmia' (Virchows Archiv 1934 [illegible] 21)

Dr Lüdeke defines thrombophilia as a pathological disposition to recurrent thrombus formation especially in unusual situations He describes [illegible] cases of thrombophilia in polycythæmia cases and gives a critical review of literature on the subject In [illegible] cases described under the heading [illegible] thrombosis," "traumatic thrombosis," "thrombophlebitis migrans," he found that blood counts were given in only 14 cases, and that in 10 of these 14 there was polycythæmia The tendency to thrombus-formation in polycythæmia may be due to excess of thrombocytes in the blood and diminished circulation-rate, which latter may be due to increased blood viscosity and to increased diameter of blood-vessels resulting from increase of blood volume He thinks that polycythæmia is an important cause of pathological deposition of thrombus from the circulating blood. I am, Sir, yours faithfully,

London, W., Oct 29th F. PARKES WEBER

PURKINJE AND THE HARVEIAN LECTURER

To the Editor of THE LANCET

SIR,—Dr James Collier's article on Inventions and the Outlook in Neurology in THE LANCET of Oct 20th (p. 855) prompts me to call the attention of the author and your readers to the following statements which evidently are based on not quite correct informations

1 Purkinje, The Nerve-cell: "In 1835 an Austrian priest of gipsy family became .. etc" J Ev Purkinje was neither a fully ordained priest nor a gipsy! In fact, to call J. E Purkinje a gipsy evokes, if I may put it that way, an almost distressing feeling, for Purkinje was one of the greatest men from our countries, in fact one of the greatest physiologists, or better to say, scientists in the realm of medicine, of the last century. J Ev Purkinje was born on Dec. 17th, 1787, in Libochovice in Bohemia—Bohemia is a country of Czechoslovakia in the same sense as Wales is a part of Great Britain—and was of Czech parentage For a short, yet excellent, biography of Purkinje in English see the well-known "History of Medicine" by Fielding H. Garrison London· Saunders, 1917, p 475 et seq of the second edition which I have to hand

2 The statement that the cellular theory of tissues was established by Schleiden and Schwann is not quite exact, for Purkinje was not only an inventor of microscopic technique but also the originator of the cellular theory, as has been shown by F. K. Studnička, who is an authority on the life and work of Purkinje. See "Nature," London, October, 1932, p. 634, "The Early History of the Cell Theory," by J. Florian, who brings a short, yet fully informative, summary of Studnička's researches on the history of the cellular theory For particulars see Studnička's papers as follows: (1) "Die Organisation der lebendigen Masse," Mollendorf's Handbuch der Anatomie des Menschen, vol i, Part 1. (2) "Aus der Vorgeschichte der Zellentheorie, H Milne Edwards, H Dutrochet, F. Raspail, J E Purkinje," Anatomischer Anzeiger, vol. lxxiii, Nos 17–18, Jena, 1932. (3) "Matthias Jacob Schleiden und die Zellentheorie von Theodor Schwann," Anatomischer Anzeiger, vol lxxvi, Nos 5–6, Jena, 1933 (4) "Joh Ev Purkinjes und seiner Schule Verdienste um die Entdeckung tierischer Zellen und um die Aufstellung der Zellentheorie," Acta Societatis Scientiarum Naturalium Moravicae, tom iv, Fasc. 4.

3 Prochaska, Reflex Action: "In 1784 a professor of anatomy in Moravia wrote a . . . etc." In the eighteenth century there was no anatomy in Moravia—Moravia is a country and a part of Czechoslovakia in the same sense as is Wales a part of Great Britain. The only one full university in Moravia, with a medical faculty and ipso facto an anatomy faculty, is the Masaryk University, of which I am a member, and this university was founded after the war George Prochaska was born in 1749 in Blizk Southern Moravia, studied medicine in Prague, in Vienna, was later professor of anatomy physiology at the University of Prague, and after at the University of Vienna till 1819 The referred to by Dr. Collier is, in all probabilit following one Adnotationes academicae observationes et descriptiones anatomicas, and Leipzig 1780–1784.

I trust that the author of the very inte oration will believe me that I make these few in the fairest spirit, for I know very well that as in this case, much easier for me to get the nec information than for a writer outside my countr

I am, Sir, yours faithfully

V

Masaryk University, Anthropological Institute,
Czechoslovakia, Oct. 24th.

THE UBIQUITOUS COLD

To the Editor of THE LANCET

SIR,—Mr. Macleod Yearsley in his letter issue of Oct. 13th supposes that "a head dared to issue a notice that any boy sent to in the acute stage of a cold would be sent once would be in the nature of a hero, but find himself a martyr" It would be useful to the experience of those in charge of school are attempting to deal with this question boarding-school while it might be rather diff send back a pupil suffering from a cold he least be isolated And the common cold even be scheduled as an infectious disease purpose of the medical certificate which is each term by the school authorities

In some ways the day-school is more diffi deal with because it is not a self-contained munity like the boarding-school In order to some information about the problem here I made inquiries from the head of a girls' day and kindergarten who conducts a systemati paign against colds I showed her Mr Ye pathetic letter and invited comments. She me her experience is that unless the head of or her deputy sees that the rule is *irrevocably* becomes quite useless. She says —

> "It is only after a long period of consistency matter that parents begin to realise that it does to keep children away at the beginning of the that it is in their own interest Even then one remark, 'She is well dosed—I don't think *she* will to any harm' On the whole I find the parents to help and appreciative of the rule. But the staff must be just as consistent as the head in not children with colds to attend; every case must b at once until the school rule is understood Eve one has to begin all over again with new child heartily agree that the individual cold may not be ventable, but we certainly can make an effort to mass production"

I gather that even medical parents are not guiltless in this matter, and it is extremely d for a lay person to send home the child of a d But this gallant headmistress does so and su

I am, Sir, yours faithfully,

Harley-street, W, Oct 27th LEONARD F. BRO

WALSALL GENERAL HOSPITAL —An extensi ing £25,000 was opened at this hospital last wee new wards are designed on the verandah princ increase the accommodation from 100 to 146 beds.

MEDICAL USES OF RADIUM

REPORTS FROM RESEARCH CENTRES

It is generally agreed that the three varieties of lignant disease (other than skin cancer) which offer e most promising field for the use of radium are rine, buccal, and breast cancer In the twelfth of e annual summaries of results of research work in e treatment of cancer by radium lent by the Medical search Council to centres throughout the country,[1] e bulk of the space is taken up with these three ions

UTERINE CANCER

It is stated that the technique generally adopted local treatment with radium supplemented by rays to the pelvis A comparison of the results tained with those obtained by surgery is said to ng out two outstanding points frankly operable ses are treated just as successfully by radium as , surgery, but with a much smaller operation rtality, while surgically inoperable cases treated radiation yield a by no means negligible percentage clinical cures—i e, apparent freedom from disease— five years' standing This leads an increasing mber of gynaecologists to refer their patients for diotherapy rather than to submit them to a surgical eration

he results reached in cases of cancer of the *cervix uteri* given in some detail, the cases being divided into four ges of disease, and a comparison made between seven erent centres For this comparison the results with ients treated in the three years 1930, 1931, and 1932 bined are used, so that the duration of observation is rt It is concluded that there is "a somewhat astonish difference in the survival rates, and that this difference only be attributed to differences in the details of atment since the *general* methods of treatment are very ilar" It must be observed, however, that the compari is a very rough one, since the proportions of patients ted in each of the three years amalgamated are not any means the same at the different centres For ance, at St Bartholomew's Hospital there were 36 ients of Stages I and II treated in 1930–32 and at iversity College Hospital there were 29 But at the mer 31 per cent belong to the latest year, 1932 com ed with only 21 per cent at the latter The slightly her survival rate recorded for the patients at St tholomew's is not, therefore, very surprising In fact, only centre which does show a quite abnormal result comparison with the other centres is the Marie Curie spital Of 100 patients in Stages I and II treated there 1930–32, 83 per cent were alive at the end of 1933 ile of 240 patients treated at six other centres the ure was only 52 per cent similarly, 40 per cent of 269 ients in Stages III and IV treated at the Marie Curie spital were alive at the end of 1933 compared with per cent of 209 patients at the other centres If separate rs be taken, instead of the amalgamation of the three, similarly favourable result is reached, so that the tistical fallacy referred to above is not important in s case If these differences are due to differences in the ails of treatment they appear to be very important ails On the other hand, it may be noted that the portions of patients in each stage differ very widely ween the centres For instance at the Marie Curie spital in 1930–32 only 28 per cent were classified as ges I and II and 72 per cent as Stages III and IV At mingham General Hospital, on the other hand 61 per t, are allocated to Stages I and II and only 39 per cent Stages III and IV Such very large differences inevitably se the question as to whether the classified standards which patients are allocated to the various groups lly are identical at the different centres

BUCCAL CANCER

For primary lesions of the tongue radium is said to be successful in the proper hands Primary growths of the tongue are subjected to interstitial treatment, or exposure to larger units, 1 g of radium and upwards applied externally Dissatisfaction is recorded with the results of the treatment of the glands associated with buccal cancer, at present there seems to be an even balance of opinion and practice between surgical removal and irradiation

In 1930–32 over 300 patients have been treated per annum for carcinoma of the *buccal cavity* Taking the figures for 1930 (three and a half years' survival) it is found that of 100 patients with cancer of the tongue 11 survive at the end of 1933, of 40 with cancer of the floor of the mouth 13 (33 per cent) are alive of 42 with cancer of the lip 17 (40 per cent) are alive, while of 41 with cancer of the œsophagus everyone is dead These patients are not divided by stage of disease, the numbers being probably too small for the purpose

BREAST CANCER

The success which has followed surgery in early cases of mammary cancer makes it likely that surgery will continue to be used for many years yet In view, however, of the limitations of surgery, once there is invasion of the axilla, exploration of radiological methods in this region is considered desirable The axilla is not a favourable site for interstitial radium therapy, being the seat of so many important nerves and blood vessels X rays are regarded as probably a more suitable agent, and if the work of H Coutard in this region can be continued on anything like a comprehensive scale, it is felt that a big step forward will be made in the treatment of breast cancer

With cancer of the *breast* no attempt is at present made to compare the results reached in different hospitals, and the cases are not divided into stages of disease when treatment was begun, but only into primary and recurrent growths Taking all the hospitals together 157 cases were treated in the years 1925, 1926, and 1927 Of 98 in the primary group 18 survive at the end of 1933 while of 59 in the recurrent group only three are still alive Those treated in 1928 may be taken to give the five year survival rate (the average duration of exposure to the end of 1933 is actually five and a half years if the patients presented themselves throughout 1928) Of the 104 patients treated in this year 79 are classified as primary and 25 as recurrent Of the former 21 survive (27 per cent) of the latter all but one are dead

Reports from the Council's centres suggest that surgery and radiology are employed almost to an equal extent in the treatment of breast cancer At centres in St Bartholomew's Hospital and Aberdeen the practice for some time has been to treat the growth and probable extensions with radium and then after six to eight weeks remove it surgically and examine it to see the extent to which the malignant portions have been affected by the gamma radiation

The details published from Aberdeen show that under certain definite conditions of irradiation there are comparatively few actively growing malignant portions of the growth left To what extent this issue depends upon the histological character of the growths themselves remains to be established

At St Bartholomew's Hospital the patients are to be followed up and their five year survival rate ascertained and compared with that obtained by operation and radium respectively, from previous follow up studies it has been ascertained that the five year survival rate is approximately the same—i e 40 per cent following operation or following radium treatment

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[1] Medical Research Council, Special Report Series No 197 Stationery Office 1934 Pp 40 9d

In addition an intensive histological study will be made of the breast and glands after removal in order to find out: (*a*) the histological effects of radium on carcinoma tissue; (*b*) whether the treatment has destroyed all the tumour cells, or left areas untouched; (*c*) whether carcinomatous glands are effectively treated by radiation, (*d*) the optimum time for excision of the breast after irradiation.

The following procedure has been adopted.—

On admission the site of the tumour and palpable glands, if present, are outlined in Indian ink and photographed Radium is then inserted into the tumour and left for seven days; one or more radon seeds are put in to mark the site of the tumour, and an X ray photograph is taken with the radium needles in situ. On removal of the radium a small piece of the tumour is taken for biopsy After 70 to 80 days the breast and axillary glands are excised and subjected to detailed histological examination. The breast is pinned out on a board, and hardened in formalin; after 14 days it is accurately outlined on graph paper ruled in 1 cm. squares, the nipple being placed in a constant position—*n* 20. The breast is then cut into vertical strips 1 cm in width, each labelled so that the breast can be reconstructed. Each strip is carefully examined and sections are taken from any showing signs of growth, and each block is marked upon the diagram

Nineteen cases have been studied in detail in this manner It is, however, intended to study a series of 50 cases before a definite conclusion is formulated.

EXPERIMENTAL WORK

In the purely experimental section of the report there will be found a summary of researches designed to elicit more about the response of living organisms to radiation, both when changes are made in the type of radiation and the time intervals at which the dose of irradiation is given, and when changes in the physiological condition of the cell are manifest.

There can be no doubt that the outcome of the research in radium therapy initiated by the Medical Research Council at centres all over the country has done two things: it has helped towards the stabilisation of methods of treatment, and it has shown that the reaction of the tissues of the body to this form of radiation is of the most complex and bewildering variety.

LONDON MEDICAL SOCIETIES

AT the opening of a new session we are again giving for the convenience of our readers the names of presidents and hon. secretaries of London medical societies, with the addresses at which they can be approached.

Royal Society of Medicine—President Dr. Robert Hutchison Hon secretaries. Mr C W Gordon Bryan and Dr. Anthony Feiling. (1, Wimpole-street, W.1)

Medical Society of London—President. The Lord Horder. Hon secretaries. Dr. H. E. A. Boldero and Mr. C. P. G. Wakeley. (11, Chandos-street, W.1.)

Hunterian Society—President: Dr W. H F. Oxley. Hon secretaries. Mr. Martin Oldershaw and Mr. A E Porritt (26, Upper Wimpole-street, W.1.)

Harveian Society—President Dr. A. Hope Gosse Hon secretaries. Dr T C Hunt and Dr A D. Morris (12, Queen Anne-street, W 1)

Royal Society of Tropical Medicine and Hygiene—President. Sir Leonard Rogers, F R S Hon secretaries Dr. C. M. Wenyon, F R S, and Dr. N Hamilton Fairley (Manson House, 26, Portland-place, W.1)

Royal Medico-Psychological Association—President: Dr. Daniel Rambaut Hon general secretary. Dr Reginald Worth. (Secretary's Office, 11, Chandos-street, W.1)

Society of Medical Officers of Health—President R Veitch Clark Executive secretary Mr G Elliston (1, Upper Montague street, Russell- W.C 1.)

Tuberculosis Association—President Dr L Burrell Hon secretary Dr F R G. Heaf (Co Hospital, Hendon, N W.9)

British Institute of Radiology—President: Mr Shearer, D Sc Hon secretary. Dr. R. Boulton and Mr G E Bell, M Sc. (32, Welbeck street, W.1.)

Medico-Legal Society—President Sir B Spilsbury Hon secretaries: Mr Ernest Goddard Dr. W. G Barnard (3, South-square, Gray's Inn, W

London Association of the Medical Women's Federat President. Dr E M. Pickard. Hon. secretary Philippa Martin. (40, Wimpole-street, W.1)

Medical Society of Individual Psychology—Ch Dr J. C. Young Hon secretary Dr O H W (22, Ridge-hill, N W 11.)

Society for the Study of Inebriety—President Humphry Rolleston Hon. secretary: Dr T. N Kelr (144, Harley-street, W.1.)

The Cancer Society.—President. Dr A J. C. Hon. secretaries: Dr C F Marshall and Dr Kennard. (11, Chandos-street, W.1)

London Jewish Hospital Medical Society.—P Prof. Charles Singer Hon. general secretary Dr Sorsby (London Jewish Hospital, Stepney Green,

St John's Hospital Dermatological Society.—Pres Dr J. E M. Wigley Hon secretary. Dr. I. (49, Leicester-square, W.C.1.)

Chelsea Clinical Society.—President: Dr. Sundell. Hon. secretaries. Mr. A Rugg-Gunn and H. Paxton Baylis. (35, Harley-street, W 1)

Hackney Medical Society—Chairman: Dr Ambrose. Hon secretary: Dr. H Stark. (26, Newington-common, N 16)

Hampstead Medical Society—President: Dr J Glover. Hon. secretaries: Dr James Fairbroth Mr John Kennedy. (2, Fawley-road, N W.6)

North London Medical and Chirurgical Soc President. Dr J. H Morton Hon. secretaries W E Snell and Dr J. Campbell Maxwell (Royal N Hospital, N 7)

North-West London Medical Society—President Harold Gillies Hon secretary: Mr Lionel Green. Harley-street, W.1.)

Priory Medical Society—Hon secretary Dr. Pearse Williams. (112, Harley-street, W.1)

South-West London Medical Society—President: W. J Morrish. Hon. secretaries: Dr E G Housd Dr A W. Wells (51, Longley-road, S W 17)

Paddington Medical Society—President Dr W Bendle Hon secretary: Dr. Saul Crown. (81, avenue, W.9)

West London Medico-Chirurgical Society—P Dr. Howard M Stratford Hon. secretaries: Dr Konstam and Mr James Kemble (40, Harley-street,

West Kent Medical Society—President: Dr L W Hon secretary: Dr C J B Buchanan (267, Baring- Grove Park, S E 12)

SALE OF CHRISTMAS SEALS—The National ciation for the Prevention of Tuberculosis is organising a sale of Christmas seals to funds for the development of tuberculosis over Great Britain The idea originally came Danish postal clerk, who decided that every package at Christmas time could bear another which would be sold for the benefit of a hospital tuberculous children The scheme has spread to countries, and last year it was tried successfully country Sheets of seals may be had from the org secretary of the association, Tavistock House Tavistock-square, London, W C 1.

PANEL AND CONTRACT PRACTICE

The Panel Conference and After

the debate on certification it was stated that, lst some societies never paid beyond the date of medical certificate, others paid up to the day of agent's visit whatever the date on the certificate s was risking surcharge by the Government auditor e man declared off before the date of this payment, some large societies said they never had any ible of this kind although they always took risk

he Insurance Acts Committee, after withdrawing original paragraph on alternative occupations on ground of infringement of professional secrecy, nced the conference to accept the suggested letter h the addition of a line indicating when it was ught a final certificate would be issued It came at the conference that the I A C had not discussed question of professional secrecy with their legal isors The form is actually in use at the present e by some societies, but, in view of the fact that h procedure would not be adopted in private ctice, insurance practitioners who want to avoid ible would be well advised to consign it to the tepaper basket, if and when it arrives Alter ively, the consent of the patient might be obtained report on his condition It is not easy to see in t way this letter is preferable to reference to the I O Dr Dain, chairman, said that two societies uld not have anything to do with it on the ground of to of time which might be occasioned in its use, y get the R M O 's opinion in about four days He ms to have spoken of "the unsatisfactory cedure of referring the patient to the R M O self" without explaining to the conference in t respect the procedure is unsatisfactory Many tors are now doing this quite frequently in cases doubtful incapacity with the full knowledge and eement of the patient

he patient respects the doctor who says to him a your case it is difficult to decide how much ger you ought to stay on the funds You see I o to be fair to your society as well as to you I am refore proposing to get the R M O 's opinion about r condition He will let me know what he thinks your case" Such a procedure cuts away the und from the agent who goes round telling the ient that it must have been the doctor who sent case to the R M O, as the society did not The cedure is fair to all parties, it is straightforward, l in conformity with the best traditions of private ctice

National Defence Trust

he latest figures are satisfactory although London s severely criticised at the conference for the small centage of its contribution 37 as compared with by Middlesex The explanation is that the don committee subscribes to two funds the ional and that of the M P C, between which, in absence of precise instruction, the money is ally divided Last year sanction was given by conference to spend part of the interest in helping and infirm practitioners to retire thus preventing m to themselves and to the service The outlay not large, for these old people do not as a rule live re than a few months after retirement Sanction s also given to helping insurance practitioners in ally who have suffered loss through resisting the posals of the workmen's committee There is some division of opinion as to what should be done with this fund Some want to see the interest used for the benefit of the service one suggestion being to give grants to research workers, others would like all the interest to be added to the principal to increase the fund as a fighting force—at the moment it does not represent 4 per cent of the total annual income of the service Smethwick wanted to make certain that the older practitioners who have paid their quota should not be asked to continue subscribing simply for the benefit chiefly of younger men who do not subscribe Some return, it was felt, should be made to the old subscribers

Partnership with Non-Panel Practitioner

Lancashire asked the conference to express the view that such a partnership was prejudicial to the observance of the regulations by leading to the receipt of fees by insurance practitioners from patients on their lists Dr Dain pointed out that a practitioner is not bound to disclose the fact that he is in partnership with a doctor not on the insurance list This important subject has not been discussed at the conference for a long time Take the case of Dr N not an insurance practitioner, in partnership with Dr I, who is on the medical list The question arises whether their surgeries are in separate houses or in the same building, whether they use the same surgery at different times for their consultations There can be little cause of complaint if an insured person on the list of Dr I consults Dr N at Dr N 's house when Dr I is himself available to be consulted, but if such a patient is sent by Dr I to see Dr N then Dr N becomes the deputy of Dr I and there will presumably be grounds for complaint if a fee was charged by Dr N. The position becomes a little more difficult for the patient if the two surgeries are in the same building, for new patients may not know either Dr I or Dr N personally In such cases some indication should be made as to which room is being used for the insurance part of the practice There can however, hardly be any excuse for Dr N charging fees to insured persons on Dr I 's list when both use the same room at different times for consultations Obviously a patient who suddenly decides to see his insurance doctor will consider Dr N to be acting for the doctor of his choice if, when he arrives at the surgery he finds Dr N doing Dr I 's work Dr N will of course not want to charge the insured person on Dr I 's list if he recalls that he is already sharing in the payment made to Dr I for his contract All these difficulties would straighten themselves out if insured persons were definitely told that when consulting a new doctor they should state that they claimed to be treated as an insured person The position of Dr N is quite different when it comes to the treatment of insured patients who are not on his partner's list, for them he is quite free from any panel obligations such as emergency treatment or temporary resident work

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UNIVERSITY OF CAMBRIDGE —It is announced that Sir Percival Horton-Smith Hartley [illegible] at St Bartholomew's Hospital has [illegible] the University for the further [illegible] of the [illegible] Horton-Smith [illegible] income which will [illegible] value of the [illegible] Sir Percival is the eldest [illegible] and a brother of Raymond John Horton-Smith [illegible] years on [illegible]

MEDICAL NEWS

Royal College of Physicians of London

At a quarterly meeting of the College on Oct 25th, with Lord Dawson, the president, in the chair, Dr J R Charles, Dr C E Lakin, and Dr W W C Topley, F R S, were elected councillors, and Sir Raymond Crawfurd a representative on the committee of management Sir Comyns Berkeley was elected a representative of the College on the Central Midwives Board The president announced the following appointments Dr F. Ridehalgh as Prophit scholar for the tuberculosis survey scheme; Dr Edward Loggie Middleton as Milroy lecturer for 1936, and W. R L Harrison (Epsom College) as Jenks scholar for 1934 The FitzPatrick lectures, on the history of the endocrine organs, will be delivered by Sir Humphry Rolleston at 5 P.M on Tuesday, Nov 6th, and Thursday, Nov 8th.

The College decided to revise the regulations for the licence so as to preclude the possibility of foreign medical graduates obtaining the diploma, by an indirect channel, with less than three years' clinical study in this country

By an overwhelming majority the College approved a report from its special committee, which was in general agreement with the recent report of the departmental committee on sterilisation.

The following candidates, having satisfied the censors' board, were admitted to the membership Henry Howarth Bashford, M D Lond, Philip Graeme Bentlif, M D Camb, Stanley George Bradfield, M B Sydney, Ernest George Brewis, M D. Durh, Felix Warden Brown, M B Oxon, Sushil Chandra Chatterjee, M B Calcutta, Hugh Richard Jarvis Donald, M B Oxon, Cyril Percy Donnison, M D Lond, Clarence Michael Guiney, M B Sydney, John Fulford Jarvis, M B Lond, Bhagwan Singh Khurana, M B Punjab, Frank Graham Lescher, M C, M D Camb, Harry Stephenson Lucraft, M D Edin, Samuel Nevin, M D Belf, Carlyle Thornton Potter, M D McGill, Lawrence Orred Roberts, M B Lond, Ibrahim Shawky, Rupert Sykes, M B Lond, Padukotah Sreenivasachari Varadarajan, M B Madras, Herbert John Williams, M D Birm., Rupert Allan Willis, M D Melb, and Frederick James Wright, L R C P

Licences to practise were conferred upon 123 candidates (115 men and 8 women) who have passed the final examination of the Conjoint Board and have complied with the by-laws of the College The following are the names and schools of the successful candidates —

A S Amsden, Guy's, N Angel, Birm; T G Armstrong, Camb and London, J. C Baillie, King's Coll, C R Barker, Univ Coll, G Bates, Camb and Birm, D M Blomfield, St. Bart 's, C H T. Bond, Camb and St. Mary's, A C E Breach, St Thomas's, D M Bressler, St Bart 's, Margaret M B Carey, Royal Free, R C F Catterall, Camb and Univ Coll, F. B Champion, Guy's, Dora J A Clark, Royal Free, R Clarke, Oxon and St Mary's, J H L Conway-Hughes, St Bart 's, T Csato, Vienna and Middlesex, R H Dale, Camb and St Bart 's, S M Davidson, Camb and St Mary's, D A Davies, Guy's, G B Davis, King's Coll, J R Dickinson, Camb and Guy's, E W. Dunkley, London, A G Edwards, Guy's, J. K Elliott, Edin, R. S Ellis-Brown, Guy's, E A Evans, Camb and King's Coll, R Farncombe, St George's, A. Fearnley, Oxon and King's Coll; S Y Feggetter, Durham; H P Fernandes, St Bart 's, B W Fickling, St George's, I Finer, Guy's, C M Fysh, St Thomas's, A B F Gibson, Camb and St Thomas's, N C Griffin, Leeds and Westminster, D. L Griffiths, Manch, P K Guha, Calcutta and West Lond, W. H C M Hamilton, Camb and St Thomas's, E B Harvey, St Thomas's, G R Hawkes, Camb and Liverp, C F. Heys, Guy's, J. R. Hill, St Bart 's, R C Hill, Guy's, A H Hunt, Oxon and St Bart 's, R Hussain, Patna and St Bart 's, F Janus, Manch., G O Jelly, Oxon and Guy's, P G C Jones, Guy's, T. E Jones-Davies, Camb and St George's, H Kaplan, Cape and Guy's, A. R Kennedy, Manch, A W Khan, Bombay and Manch; M D Kiddon, St Mary's, J H. Lawrence, Leeds, B Lawson, Wits'rand and Guy's, A P. R Lewis, Westminster, J A. Lewis, St George's, S Lilienfeld, St Mary's, G M Lloyd, R Lyons, and J C McAvoy, St Bart 's, E B McDowall, Camb and St Thomas's, J. G. Mathias, London, K M Mayall, Camb and St George's, M L Meade-King, Camb and Westminster, B M Merriman, St Bart 's, J R Miles, Cardiff, C Mitchell, Guy's; Elizabeth C Morris, Royal Free, J H. Moseley, Camb and St Thomas's, R F Mowll, King's Coll, S Mullick, Calcutta and St Bart 's, R M. Noordin, St Bart 's, D G Oehlers, London; H E Osen, St Bart 's, M L Pan, Calcutta and St Bart 's, Edith A S Parry-Evans, Royal Free, H. F Patrick, St Thomas's, S. Paul, Liverp, W H Phillipps, Camb. and St Thomas's, Lillian M Pickford, Univ. Coll, F W. M Plant, Birm. and St George's, M R Preston, Middlesex; Kathleen G Priestman, Royal Free, A. W Probert, Univ Coll., E J Guy's, J Rapoport, St Mary's, C Ratnayaka, King's C J W Redgate, Middlesex, J H Rees, St Bart 's, Robinson, Birm, J S Ross, Camb and St Thomas's, Rouillard, St Thomas's; A. J Rouse, St Bart 's Sachdeva, Punjab and West Lond, J I Seidman, St. Ba R H Shah, Manch and West Lond, D. B St Mary's, C W. T Shuttleworth and J A Slieb Guy's, L W Spratt, Camb and St Thomas's, I K. Th Lond, Nest Thomas, Royal Free, B Thorne Thorne and St Bart 's, T G Tregaskis, St Bart 's, J. L Tr Liverp; R. C H Tripp, Camb and St Thomas's; Vakil, St Thomas's, W. Waks, St Bart 's, P A. W Camb and St Thomas's, H A Wallace, Camb and Coll; F H Weston, Guy's, F C H White, Camb and C T H Whiteside, St Thomas's, N Whittaker, Camb Univ Coll, S M Whitteridge, Guy's, C W K F Univ Coll, E G K Williams, Camb and St Bart.'s, Williams, Oxon and St Thomas's, W Wilson, Manch, Wood, Camb and St Thomas's, L S F Woodhead, minster, R F Wyatt, St Thomas's, and Winifred F. Camb and King's Coll

Diplomas in public health were granted (jointly with Royal College of Surgeons) M R Burke, J O F Joan Goodger, Margaret I Porteous, Kulwant Rai, Russell, Assa Singh, and J. T Wybourn, and a dip gynæcology and obstetrics to H Y Gohar

University of London

A meeting of the senate was held on Oct. 24th, the chancellor, Prof L. N G Filon, F R S, presiding following appointments were made to chairs tenab St Bartholomew's Hospital medical college Dr L Witts was made professor of medicine and Prof. G Hadfield professor of pathology, both to take office Jan. 1st, 1935

Prof Witts was born in 1898 and educated at the B Grammar School, Warrington, where he gained scholarsh exhibitions From 1916–19 he was on war service and entered the University of Manchester, graduating M.B., with 1st class honours in 1923 After being house phy the Manchester Royal Infirmary and at the Brompton he was awarded the Dickinson travelling scholarship in America from 1924 to 1926, and then in Prague be election as John Lucas Walker Student of Pathology University of Cambridge In 1928 he was made in the medical unit at the London Hospital and in 1929 physician to Guy's Hospital From 1929 to 1934 he Will Edmonds Clinical Research Fellowship Dr Witts his M D Manch with commendation in 1926, in the sa he became M R.C P Lond and was elected F R C.P. in 19 Goulstonian lecturer in 1932 His research work has chiefly with blood diseases and especially with anæmia, of a form bears his name

Prof Hadfield was born in 1889 He was educ Plymouth and at St Bartholomew's Hospital where he Harvey Prizeman in physiology and Junior Scholar in a and biology in 1908 He qualified M B, B S Lond in 191 took the M D with gold medal in 1913, the M R C.P in 1 F R C P in 1932 He was on war service with the R.A.M.C 1914–19 and has held the following appointments physician at St Bartholomew's Hospital, 1912–13, registrar and assistant pathologist at Dreadnought Ho 1913–14, pathologist, bacteriologist and clinical patholo the General Hospital, Bristol, and demonstrator in path the University of Bristol, 1920–28, University profes pathology at the London School of Medicine for Women, professor of pathology in the University of Bristol since His publications include "Recent Advances in Patholog collaboration with Dr L P. Garrod) and communicat medical journals on neuropathology, tumour formatio cardiac infections

The following appointments were made to rea at the British Post-Graduate medical school, from 1st, 1934, or soon thereafter bacteriology, Dr A Miles; medicine, Dr R S Aitken, obstetrics and g cology, Dr J. Chassar Moir, pathological che Mr Earl J. King, Ph D, surgery, Mr. Lambert Rog

Dr Miles is 30 years of age In 1921 he was elected Exhibition in Natural Science at King's College, Cambridge obtained a 2nd class in the tripos, taking patho Part II (1925) He completed his medical education Bartholomew's Hospital and qualified M R C S Eng and Camb in 1928 In 1929 he was admitted M R C P He he the following posts —casualty physician in the out-patient and house physician at St Bartholomew's Hospital, 1 demonstrator in bacteriology at the London School of Hy and Tropical Medicine, 1929–31, and since April, 1931, de strator in the dept of pathology at the University of Cam He has published papers on serology.

Dr Aitken is 33 years of age. He studied at the m school of the University of Otago in Dunedin and qualified Ch B New Zealand in 1922 In 1923 he was made demo in anatomy in the same university and tutor in physiology at Knox College, Dunedin In 1924 he held house physician and casualty house surgeon at Dunedin Ho During 1924–26 he was a Rhodes Scholar at Balliol C Oxford, obtained the D Phil Oxford in 1927, and

-27 was Owen Williams Research Scholar at the London pital then holding posts at this hospital as pathological ant, house physician and, since 1930, first assistant to the cal unit In 1929 he obtained the M R C P Lond ring 1932–33 he spent six months visiting medical clinics in many His publications are mainly biochemical in scope

Moir is 34 years of age He studied at Edinburgh Uni sity, where he qualified M B B S in 1922 and took the M D gold medal) in 1930 He obtained the F R C S Edin in and is a member of the British College of Obstetricians and cologists He has held the following posts —house ician at Edinburgh Royal Infirmary senior house surgeon to General Hospital house surgeon to the Simpson Memorial Royal Maternity Hospital of Edinburgh He was then in ral practice for five years, and in 1926 was appointed hon t surgeon to the East Surrey Hospital and medical officer to Reigate and District antenatal and infant welfare centre 1930 he has been whole time assistant to the obstetric unit niversity College Hospital In 1932 he was awarded a efeller Fellowship and he spent six months in America ly at Johns Hopkins Hospital He has also studied in da Vienna and Berlin His publications are mainly on trics and include an important contribution to the phar ology of ergot

King is 33 years of age He was educated at public ols in Ontario and British Columbia He held a scholarship randon College McMaster University and a bursary (1924–25) a studentship (1925–26) at the University of Toronto In he obtained the B.A degree with honours in chemistry and logy at McMaster in 1924 the M A in Chemistry and in 1926 Ph D of Toronto During 1926–27 he was research associate e dept of medical research at the University of Toronto, ng 1928 and 1929 he worked at the Lister Institute and at the er Wilhelm Institut Munich Since 1930 he has been tant professor of medical research and director of the sub of biochemistry at the *Banting Institute Toronto His* nal work has been concerned chiefly with the chemistry of ols and the phosphatase reaction

Rogers is 37 years of age He was educated at Melbourne school and at the Middlesex Hospital He served in the ralian Naval Transport Service from 1915 to 1917 and then ned his medical studies After passing the second pro onal examination in June 1918 he became a surgeon ationer in the Royal Naval Volunteer Reserve He lified M R C S Eng in 1920 and became F R C S Edin in and F R C S Eng in 1933 In 1928 he obtained the M Sc les) and was elected F.A C.S and in 1931 F R A C S He held the following posts —house surgeon (1920 21) at dlesex Hospital senior house surgeon and later resident ical officer to Stockport *Infirmary 1924–25 assistant in the* ical unit at the Welsh National School of Medicine since and assistant director of the unit since 1932 Hunterian essor Royal College of Surgeons (1934) He has published erous papers chiefly on neuro-surgery

r Alexander Haddow was reappointed to the Laura de roto Studentship

ttish Conjoint Board

t recent examinations of the conjoint board of the al Colleges of Physicians and of Surgeons of Edinburgh, the Royal Faculty of Physicians and Surgeons of gow, the following candidates were successful —

L.R.C P L.R.C S AND L.R.F P & S

erle F Schmeckloth J J Jackson Fritz Ansbacher Max nbaum Herman Lipschutz Fritz Dannheisser F M les Julius Levy S L Last Leo Wielicki Hans Winter rich Davidsohn Samuel James Paul Rosenthal Hans lschmidt I H B Ghosh Georg Friedlaender A B Stern Felix Besser Edward Whyte, O F Manase K H ehne, I L Rothschild P V J Solomon P A Printz Goldmann C H Straughan Gerhart Wolff Max Rakofsky L Stevenson Max Kraus Arthur Ehrlich Werner Cohen ner Grunstein, H K Rosenkranz R F Elkan Johannes er, L R Studebaker A B Morrison O S Kohnstamm g Kosak Erika Schwabacher T C A Wilson Franz rbach, Ilse I Meyer Alfred Rosskamm R F Wilson A Beetham Wolfgang Buky, Fritz Muller M F Tausend olf Friedlaender H F D Whitelaw T G K Bhagwat mut Nussbaum, H K G Wong Fritz Bernstein, Fritz y Ferozo Hussain and Yendall Carasik,

D P H

A Guy Barbara C Welsh J W Brydon H A Raeburn, th Somerville and James Macfarlane

Mary's Hospital

A *research student will shortly be appointed to the stitute of pathology and research at this hospital Prefer* e will be given to old St Mary's students and the *arch may be carried out in any of the departments of* institute Further particulars will be found in our ertisement columns

berculosis Association

meeting of this association will be held at Manson se 26, Portland place, London W on Friday 23rd At 5 15 P M Dr L S T Burrell will deliver presidential address on tuberculous reinfection in *ults, and at 8 15 P M Dr G T Hebert will speak on* termination of artificial pneumothorax treatment

Rt Hon Christopher Addison, M.D F R C S has been returned to Parliament for the Swindon division of Wilts

Vienna Post-Graduate Courses

Post graduate courses in gynaecology and obstetrics and on the ear, nose and throat will be given by the American Medical Association of Vienna, beginning on February 18th 1935 The courses will last six weeks and the teaching will be given in English Further information may be had from the Association, Alserstrasse 9, Vienna, Austria

Royal Sanitary Institute

The bed bug as a housing problem will be discussed at a sessional meeting to be held on Tuesday, Nov 13th at 5 15 P M, at 90 Buckingham Palace road, London, S W Lord Balfour of Burleigh, president of the institute, will take the chair, and the discussion will be opened by Mr A W McKenny Hughes of the department of entomology of the British Museum (Natural History)

Industrial Welfare Society

The Duke of York will preside at this society's dinner at *the May Fair Hotel, London, on Dec 11th, when the* speakers will include Lady Snowden, Mr B Seebohm Rowntree, Dr W J O'Donovan, M P, and Mr Robert R Hyde Further particulars may be had *from the* Secretary at 14, Hobart place, S W 1

University of Manchester

The council of the University has equipped a laboratory of surgical research The laboratory is at 20, York place immediately adjacent to the Royal Infirmary Applications to work in the laboratory should be made, in the first instance, to *Prof J D Telford*

Glasgow University Club

The annual dinner of the London section of this club will be held at the Café Royal, Regent-street W on Friday, Nov 23rd at 7 30 P M Prof Alexander Macphail, His Majesty's inspector of anatomy for England and Wales is to be in the chair Any Glasgow University men who though not members of the club, wish to attend are asked to communicate with the hon secretaries, 62, Harley House, N W 1

Edinburgh Graduates Association

The annual general meeting of the West Riding Association of graduates of the University of Edinburgh is to be held in the Great Northern Hotel Leeds, on Wednesday, Nov 14th, at 6 45 P M The annual dinner will follow at 7 30 P M The guest of the evening will be Mr John Wheeler Dowden, consulting surgeon to the Royal Infirmary and Chalmers' Hospital, Edinburgh Further information may be had from the hon secretary of the association 33, Manor row, Bradford

Fellowship of Medicine and Post-Graduate Medical Association

Dr A J Clark Kennedy will lecture at the Medical Society of London, 11 Chandos street, W at 2 30 P M on failing vision on Nov 6th, and on herpes and encephalitis on Nov 13th The next lecture in the series on diet and dietetics will also be given at the Medical Society on Nov 7th at 8 30 P M by Dr F G H Calvert who will speak on the diet of the diabetic, and on Nov 14th Dr F W Christie will speak on the diet of the obese and thin On Saturday Nov 10th at 3 P M there will be a special demonstration of surgical cases by Mr C L Shattock at the National Temperance Hospital Hampstead road, London, N W *Forthcoming courses of instruction* include venereal disease at the London Lock Hospital (Nov 12th to Dec 8th) gynaecology at the Samaritan Hospital (Nov 17th–18th) proctology at St Mark's Hospital (Nov 19th to 24th) and an evening course in rheumatism at the British Red Cross Clinic on Tuesdays and Thursdays from Nov 20th to Dec 6th A course in diseases of the chest will be given at the Brompton Hospital between Dec 17th and Jan 11th A panel of teachers is available daily for individual tuition in various branches of medicine and surgery, and further information can be had *from the secretary of the Fellowship*, 1 Wimpole street London, W 1

Post-graduate Work in Newcastle

Under the auspices of the University of Durham College of Medicine, classes meet at the Royal Victoria Infirmary, Newcastle, from 1.30 to 5 30 every Thursday afternoon till Dec 13th (except Nov 15th) A special course in midwifery and gynæcology is being held on Wednesdays at 3 P M. Till Dec. 16th there will be lecture-demonstrations in medicine and surgery every Sunday morning at 10 30. Further particulars may be had from the registrar, College of Medicine, Newcastle-upon-Tyne.

Central Association for Mental Welfare

This association will hold a conference on Nov 21st, 22nd, and 23rd in the British Medical Association House, Tavistock-square, London, W C, and there will also be two joint sessions at the Royal Agricultural Hall, Islington, N, with the Public Health Congress Sir Hilton Young, the Minister of Health, will speak at the luncheon which is being held at the Hotel Russell on Nov. 22nd at 1 15 P.M in connexion with the congress. Further information may be had from the secretary of the association, 24, Buckingham Palace-road, S W

Port Regis Preparatory School

At this preparatory school two scholarships of £100 each are annually awarded to the sons of medical men. The school is at Broadstairs, Kent, and the scholarships were recently founded by Sir Milsom Rees The next examination will be held on March 5th, 1935 Candidates must be under 9 years of age at the time of competing, and the scholarships are normally tenable till the holder leaves the school The holders will be selected at an interview in London from among those boys who have done best in some simple examination conducted in or near their houses Applications for the scholarships must be addressed to the Headmaster, Port Regis School, Broadstairs, from whom full particulars may be obtained The applications must be made not later than Feb 20th, 1935

Health Education Conference

The seventh annual conference on health education, organised by the Central Council for Health Education, will be held on Thursday, Nov 22nd, at the London School of Hygiene and Tropical Medicine, Keppel-street, Gower-street, W C Sir George Newman, chief medical officer of the Ministry of Health and Board of Education, will preside over the conference and at 11 A M will deliver the opening address. A discussion on the education of the public with regard to nutrition is to be opened by Dr J A Nixon, professor of medicine in the University of Bristol, and Dr W G Savage, medical officer of health for Somerset. Dr. James Fenton, chairman of the Council, will open the afternoon session at 2 30 P M, after which the discussion on nutrition will be concluded A second discussion on the education of the public with regard to the consumption of milk, will be opened at about 4 15 P.M by Dr Thomas Orr, medical officer of health for Ealing and chairman of the publicity committee of the National Milk Publicity Council, and the names and addresses of delegates should be forwarded not later than Nov. 16th, to the Central Council for Health Education, 1, Upper Montague-street, Russell-square, London, W C 1

The Irish Sweepstake

The drawing for the thirteenth in the series of sweepstakes for the Irish Hospitals began on Oct 27th, writes our Dublin correspondent Lord Powerscourt, chairman of the Hospitals Committee, in opening the draw referred to certain charges recently made by Sir John Gilmour, Home Secretary, against the methods of management of the sweepstakes Lord Powerscourt said that it was untrue that the greater part of the money subscribed was held by those who handled it or was given to the government of the Irish Free State The promoters' remuneration did not exceed 2¼ per cent. of the money subscribed Payments to hospitals had been delayed pending the report of a commission on the hospitals appointed by the government to study the whole hospital question, but the money held up had not gone to the government but was vested in independent trustees The total receipts for the present sweepstake amounted to £3,234,619 Of this sum £2,0 will be distributed in prizes and £590,835 will go to hospital trustees. In view of the widespread [illegible] the Irish sweepstakes were on the down-grade it is re- able that this—the thirteenth—should be the th magnitude of the series

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PARLIAMENT

NOTES ON CURRENT TOPICS

Reassembly after Summer Recess

BOTH Houses of Parliament reassembled Tuesday, Oct. 30th, after the summer recess. D the next fortnight parliamentary time will be occup in passing through their remaining stages Bills, including the Betting and Lotteries Bill, wh were still under discussion when Parliament r July. If the programme which the G wish to carry through is completed by that date is hoped that the present session will be brought a conclusion on Nov. 16th, and the new session be opened by the King in State on Nov. 20th

HOUSE OF COMMONS

TUESDAY, OCT 30TH

Reports on the Derelict Areas

Mr. DAVID GRENFELL asked the Prime Minister the reports of the commissioners on the derelict areas been considered; and if so what action it was propo to take —Mr MACDONALD replied The Government examined the reports of the investigators, and reached certain conclusions. They feel, however, th matter of this importance cannot adequately be d with within the limits of question and answer, and accordingly propose to give a day, which will be arra through the usual channels, for discussion As a prelim to that discussion the Government have decided, consultation with, and with the consent of the to publish the reports without delay I would, how remind the House that an assurance was given to gentlemen that any matters they reported to the Gov ment would be treated as confidential, and it will necessary that before publication the investigators sh be given the opportunity to excise from their reports confidential matter as, in their opinion, should not be public.

Slum Clearance

Mr. MCENTEE asked the Minister of Health whet he had any information to give the House on the posit of slum clearance —Sir HILTON YOUNG replied. At t 30th Sept. last, the latest date for which figures available, the position was that 60,242 houses in clear areas were included in clearance or compulsory orders submitted for confirmation or in agreements purchase The total number of new dwellings appro for rehousing was 54,994, of which 26,926 had b completed and a further 19,301 were under constru

Disposal of London Refuse

Mr MCENTEE asked the Minister of Health whether advisory committee on London refuse had finished th work and reported, and if so what action the of Health proposed to take in the matter —Sir HI YOUNG replied · The committee in question have an interim report dealing with the disposal of house trade refuse I understand that the Metropolitan Boro Standing Joint Committee, of which the committee question is a sub-committee, have asked for the obser tions of the common council of the City and of the Me politan Borough Councils on the report and, af these have been received, they propose to commun with me.

Medical Diary

ormation to be included in this column should reach us oper form on Tuesday, and cannot appear if it reaches er than the first post on Wednesday morning

SOCIETIES

AL SOCIETY OF MEDICINE, 1, Wimpole-street W

UESDAY, Nov 6th

Orthopaedics 5 30 P.M. (Cases at 4 30 P.M.) Mr F Laming Evans 1 Myositis Ossificans Miss E H Jobens 2 Deformity of the Wrist Mr S A S Malkin 3 Radiographs of Bilateral Köhler's Disease of Second Metatarsal

Pathology 8 P.M. (Lister Institute Chelsea Bridge road S W). Demonstrations by A B Sabin J T Edwards, E Klieneberger and R St John *Brooks* and M Rhodes 8 30 P.M. Short papers E Klieneberger Pleuropneumonia like Organisms in Apparent Symbiosis with Bacteria H R Carne Mechanism of Immunity against *Corynebacterium ovis* D McLean Production of Staphylococcal Toxin in a Dialysed Medium W T J Morgan The Antigen of *B dysenteriae* Shiga S Levy Simpson M Dennison, and V Korenchevsky Relationship between the Adrenal and Sex Glands A B Sabin Mechanism of Immunity to Certain Filtrable Viruses

VEDNESDAY

History of Medicine 5 P.M. Prof Arturo Castiglioni Morgagni and the School of Anatomy of Padua

Surgery 8 30 P.M. Mr Philip Turner Some Unusual Perforations (Presidential address)

RIDAY

Clinical 5 30 P.M. (Cases at 4 30 P.M.) Cases Dr Terence East 1 and 2 Dilatation of Aorta Dr E H Drinkwater 3 Ganglion of Wrist Treated by a Seton Dr Philip Ellman 4 Congenital Cardiac Malformation 5 Cushing's Pituitary Basophilism Dr Ernest Fletcher 6 Case for Diagnosis

Ophthalmology 8 30 P.M. (Cases at 8 P.M.) Mr E W Law Pre operative Preparation of the Conjunctival Sac by Ultra violet Rays Mr Tudor Thomas A Successful Corneal Graft in Man (with demonstration)

DON JEWISH HOSPITAL MEDICAL SOCIETY, pney Green E

THURSDAY Nov 8th—3 45 P.M., Dr A Goodman Levy Criticisms of Some Aspects of Psycho analysis from a Layman's Point of View

T KENT MEDICO CHIRURGICAL SOCIETY

FRIDAY, Nov 9th—8 45 P.M. (Miller General Hospital Greenwich S E) Dr John Sophian The Physiology and Pathology of Menstruation

LD STUDY SOCIETY

THURSDAY Nov 8th—6 P.M. (Ben Uri Gallery Woburn House Upper Woburn place W C) Dr Hazel Chodak Gregory The Importance of Common Colds

DICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY

THURSDAY Nov 8th—8 30 P.M. (11 Chandos-street W) Dr Hilda Weber Post menopausal Neuroses

ECTURES, ADDRESSES, DEMONSTRATIONS, &c.

AL COLLEGE OF SURGEONS Lincoln's Inn fields C

MONDAY Nov 5th—5 P.M. Mr E K Martin Surgical Diseases of Liver and Bile ducts

FRIDAY—5 P.M., Dr John Beattie The Posterior Pituitary Problem

AL COLLEGE OF PHYSICIANS Pall Mall East S W

TUESDAY, Nov 6th and THURSDAY—5 P.M. Sir Humphry Rolleston History of the Endocrine Organs (Fitz Patrick lectures)

VERSITY OF LONDON

MONDAY, Nov 5th—5 30 P.M. (University College Hospital Medical School) Prof Ludwig Fraenkel Forty Years of Gynaecological Endocrinology

FRIDAY—5 30 P.M. (Royal Free Hospital) Prof George Barger Chemical Questions relating to Pharmacology

LOWSHIP OF MEDICINE AND POST-GRADUATE EDICAL ASSOCIATION 1 Wimpole-street London W

MONDAY Nov 5th to SATURDAY Nov 10th MEDICAL SOCIETY OF LONDON 11 Chandos-street W Tues 8 30 P.M. Dr A E Clark Kennedy [illegible] Wed 8 30 P.M. Dr F G H [illegible] Diet of the Diabetic — ROYAL WATERLOO HOSPITAL, Waterloo road S E All-day course in medicine surgery and gynaecology —CITY OF LONDON HOSPITAL, Victoria Park E All day course in diseases of the chest.—ST PETER'S HOSPITAL, Henrietta-street W C All-day course in urology —Courses of instruction arranged by the Fellowship are open only to members and associates.

TIONAL HOSPITAL Queen-square W C

MONDAY Nov 5th—3 30 P.M., Dr S A K Wilson The Motor System

TUESDAY—3 30 P.M. Dr Critchley The Cranial Nerves and Spinal Senses

WEDNESDAY—3 30 P.M., Dr Collier Clinical Demonstration

THURSDAY—3 30 P.M., Dr Critchley The Cranial Nerves and Spinal Senses

FRIDAY—3.30 P.M. Dr Bernard Hart The Psycho-neuroses.

Out patient Clinic daily at 2 P.M.

WEST LONDON HOSPITAL POST GRADUATE COLLEGE, Hammersmith W

MONDAY Nov 5th—10 A.M. medical wards, skin clinic. 11 A.M., surgical wards 2 P.M. surgical wards, gynaecological wards eye and gynaecological clinics.

TUESDAY—10 A.M. medical wards 11 A.M., surgical wards. 2 P.M. throat clinic.

WEDNESDAY.—10 A.M., children's clinic 2 P.M., medical wards eye clinic 3 45 P.M. venereal diseases demonstration

THURSDAY—10 A.M. gynaecological and neurological clinics 11 30 A.M., fracture demonstration. 2 P.M. eye and genito urinary clinics

FRIDAY—10 A.M. skin clinic Noon lecture on treatment. 2 P.M., throat clinic

SATURDAY.—10 A.M. children's and surgical clinics, medical wards.

There will be no lectures at 4 15 this week.

CENTRAL LONDON THROAT NOSE AND EAR HOSPITAL Gray's Inn road, W C

FRIDAY, Nov 9th—4 P.M. Mr N Asherson. [illegible] for Operating on the Mastoid

ST PAUL'S HOSPITAL Endell-street W.C.

WEDNESDAY Nov 7th—4 30 P.M. Mr [illegible] Radiography in Renal Disease

HAMPSTEAD GENERAL AND NORTH WEST LONDON HOSPITAL

WEDNESDAY Nov 7th—4 P.M., Mr Clifford [illegible] Advantages of Team work in Pro[illegible]

LONDON SCHOOL OF DERMATOLOGY, [illegible] square W C

TUESDAY Nov 6th—5 P.M., Dr J E M [illegible] culosis Cutis

WEDNESDAY—5 P.M., Dr I Muende [illegible] the Chronic Granulomata. [illegible]

ROYAL INSTITUTION, 21 Albemarle-street W

TUESDAY Nov 6th.—5 15 P.M. [illegible] and Problems in Photography.

KING'S COLLEGE HOSPITAL [illegible] Denmark hill S E

THURSDAY Nov 8th—9 P.M. [illegible] Bodies in the Air and [illegible]

CHARING CROSS HOSPITAL [illegible]

SUNDAY Nov 4th—10 30 A.M. [illegible] The Stomach after Operation [illegible] of view 11 45 A.M. [illegible] Breech Case

CHADWICK PUBLIC LECTURE

WEDNESDAY Nov [illegible] 26 Portland place [illegible] D.Sc Health and [illegible]

INSTITUTE OF HYGIENE [illegible]

WEDNESDAY, Nov [illegible] Influence of Hy[illegible]

SOUTH WEST LONDON [illegible] St James Hospital [illegible]

WEDNESDAY Nov [illegible] Pulmonary [illegible]

LEEDS INFIRMARY

TUESDAY Nov [illegible]

LEEDS PUBLIC [illegible]

WEDNESDAY Nov [illegible] Disease.

ANCOATS HOSPITAL [illegible]

THURSDAY [illegible]

MANCHESTER [illegible]

TUESDAY [illegible]

FRIDAY [illegible]

[illegible]

Appointments

DUFFUS, G. M R, M B Aberd, has been appointed Senior Resident Officer to Aberdeen Royal Infirmary

KERR, J A, B Sc, M D Glasg, D P H, Medical Officer of the Borough of Grimsby.

MORLEY, ARTHUR, F R C S Eng, Hon Consulting Surgeon to the Charterhouse Rheumatism Clinic.

ORR-EWING, H J, F R C P, M D Lond., Honorary Assistant Physician to the Bristol General Hospital

RUSHTON, M A, M B Camb, L D S, Chief Assistant to the Dental Department at St Thomas's Hospital.

Medical Referees under the Workmen's Compensation Act, 1925 Dr. **THOMAS HARRISON BUTLER**, Birmingham (County Court Districts at present comprised in Circuits Nos 25, 26, and 28, for ophthalmic cases).

Certifying Surgeons under the Factory and Workshop Acts Dr. **J W MEANLEY** (Holt District, Norfolk), Dr **F W. A WATT** (Tavistock District, Devon), Dr **W E FILDES** (Wolverton District, Buckinghamshire), Dr **T O'DRISCOLL** (Guisborough District, Yorkshire), Dr **R. M EASTON** (Erith District, Kent), Dr **E S HAWKES** (Budleigh Salterton District, Devon), Dr **E M R HUTTON** (Ketton District, Rutland); and Dr. **J MCKELVEY** (Sowerby Bridge District, Yorkshire)

Vacancies

For further information refer to the advertisement columns

Association of Surgeons of Great Britain and Ireland—Surg Scholarship £350

Bedford County Hospital—First and Second H S's £165 and £140 respectively

Birmingham Children's Hospital—Pathologist £600

Birmingham City—Sen Asst M O H £750 Also Asst M O for Maternity and Child Welfare £500

Bolingbroke Hospital, Wandsworth Common, S W—H S At rate of £120

Bristol, Frenchay Park Children's Orthopædic Hospital, &c—Res M O £250

Bristol Royal Infirmary—Sen Res M O. At rate of £200.

British Postgraduate Medical School, Whitehall, S W—Dean £1800

Cambridge, Addenbrooke's Hospital—H P. At rate of £130

Cancer Hospital, Fulham-road, S W—H S At rate of £100

Cardiff Royal Infirmary—Hon Surgeon, Hon Gynæcological, and Hon Asst Physician Also Res, Reg £100

Central London Ophthalmic Hospital, Judd-street, W C—Out-patient Officer £50

Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W C.—Hon Assts for Out-patient Dept

Chiswick Hospital, Letheravon-road, W.—Hon Asst Anæsthetist and Cas O

Dewsbury and District General Infirmary—Hon Orthopædic Visiting Surgeon

Exeter City Mental Hospital—Asst M O. £350

Guildford, Royal Surrey County Hospital—H S £150

Hospital for Consumption, &c, Brompton, S W—Asst Physician

Hostel of St Luke, Fitzroy-square, W—Res M O At rate of £200

Hull, Royal Infirmary—H P to Sutton Branch Hospital At rate of £100

Indian Medical Service—Commissions

Leicester Royal Infirmary—Hon Asst Phys for Diseases of the Skin

London County Council—Two Temporary Divisional M O.'s Each £800 Also Asst M O's at various Hospitals. Each £250 Also Asst M O £600.

London Jewish Hospital, Stepney-green, E—Hon Asst. Phys to Children's Dept

Macclesfield, Cheshire County Mental Hospital, Parkside—Asst M O £350

Maidstone, Kent County Mental Hospital—Asst M O £500

Maidstone, Kent County Ophthalmic and Aural Hospital—Ophth H S At rate of £200

Manchester City—Asst Tuber O £650.

Manchester Collieries, Walkden—Medical Man

Manchester Hospital for Consumption, &c—Anæsthetist for St Ann's Home, Bowdon

Melton, Suffolk, St Audry's Hospital for Mental Diseases—Deputy Med Supt £650

Middlesex Hospital, W—Medical Man for Asst in Radium Therapy Dept £325

Middlesex Hospital Medical School, W—Two Asst Med Registrarships Each £300

Mildmay Mission Hospital, Austin-street, W—Hon Surgeon

Nottingham General Hospital—Second Cas O At rate of £200

Portsmouth, St Mary's Hospital—Two Sen Asst R M O's Each £350

Royal Chest Hospital, E C—Res M O and H P At rate of £150 and £100 respectively

Royal Free Hospital, Gray's Inn-road, W C—Two Asst M O's Each £350

Royal Northern Hospital, Holloway, N—H P and H S Each at rate of £70

St Albans, Shenley Mental Hospital—Fourth Asst M O £410

St Mary's Hospital, Institute of Pathology and Research, W—Research Studentship At rate of £200.

Salvation Army, Mothers' Hospital, Lower Clapton-road, E—Sen Res M O Also Jun Res M O £150 and £80 respectively.

Shoreham-by-Sea, Southlands Hospital—Asst M.O. £2

Shrewsbury, Royal Salop Infirmary—Res H S At r £160

South Mimms, near Barnet, County Sanatorium, Clare Med Supt £850.

Sunderland Royal Infirmary—H P £120

Surrey County Mental Hospital Service—Jun. Asst M O

Swansea County Borough—Asst M O £500 Also Res for Infectious Diseases Hospital £350

Wakefield, Middleton-in-Wharfedale Sanatorium—Med. £900

Warrington, County Mental Hospital, Winwick—Asst £500

H P.'s Also one Res H S All at rate of £200

West London Hospital, Hammersmith, W—Hon Asst. Sur

Weston-super-Mare General Hospital—Res H P and Re Each £150

Wimbledon Hospital, Thurston-road, S.W—Res M O A of £150

Worcester County and City Mental Hospital, Powick—M O £350

The Chief Inspector of Factories announces a vacant ap ment for a Certifying Factory Surgeon at Lynton shire.

Births, Marriages, and Deaths

BIRTHS

CHALLIS—On Oct 18th, at Pond House, First Walk, W Green, the wife of Dr John Challis, of a daughter

DEATHS

BOWER—On Oct 20th, at Knowle, Warwickshire, Bower, M R C S., L.S.A, in his 90th year

CHARLES—On Oct 27th, at Manchester-square, W, General Sir Richard Havelock Charles, G C.V O, K first Baronet, late Serjeant-Surgeon to H M the aged 76

HEATH—On Oct 26th, suddenly, at Lynwood, Moor Herts, Arthur Heath, M D Lond, F R C S Eng, 60 years

KYNGDON—On Oct 21st, at Newdigate House, B Frederick Henry Kyndon, M D Aberd, formerly Sydney Hospital, N.S W, in his 85th year

LOWE—On Oct 21st, at Birchington, Walter George M D Lond, F R C S Eng, formerly of Burton-on-T aged 86 years

PRICE—On Oct 22nd, at "Ambleside," Dudley, John Dudley Price, M R C S, aged 73 years

TIMMINS—On Oct. 23rd, John Lewes Timmins, M D of Bardon House, East Acton, W., aged 59

N.B—A fee of 7s 6d. is charged for the insertion of No Births, Marriages, and Deaths

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NORTHAMPTON GENERAL HOSPITAL.—The have put forward a scheme for extending the at a cost of £65,000. This will include a new child department, an ear, nose and throat department, patient department, and increased accommodation nursing and domestic staffs.

INDUSTRIAL DISABLEMENT IN LANARKSHIRE— local medical practitioners' union is putting force a scheme originated by its president, Dr G MacFeat of Douglas, to safeguard the convales accident cases. On leaving the hospital any injury further treatment will be transferred to the nearest under the care of an orthopœdic surgeon whose instru will be carried out by a trained nurse or attendant Lanarkshire council has granted the use for this p of health centres at Cambusland, Blantyre, Bellshil Shotts and of its own hospital at Motherwell, while apparatus will be available at the Victoria Infir Glasgow, and at Motherwell Where patients live from these centres they will receive help from the pithead-bath schemes under the Miner's Welfare mittee Lanarkshire coalmasters and mine worke supporting the scheme which has sufficient backi cover the first year's running, during which help is restricted to injured mine workers, although after it is hoped to extend the project to cover all c of industrial workers Members of the practitioners' are giving their services without payment Need for a scheme is apparent from the fact that each year 7000 mine workers in the county receive compens for injury.

NOTES, COMMENTS, AND ABSTRACTS

SOME IMPRESSIONS OF IEDICAL AND SOCIAL SERVICES IN LENINGRAD AND MOSCOW

3Y DORIS M ODLUM, M A , M R C S , D P M

DURING a visit last August to the U S S R I had opportunity of seeing a number of hospitals and ial institutions, among them an institute for ternity and child welfare and an abortorium in ingrad, a prophylactorium for prostitutes and one the city mental hospitals in Moscow

Mother and Child Institute in Leningrad

The aim of this institute, which consists of several two-storeyed buildings standing in a rather lected part of the city, is to collect into one area branches of a modern maternity and child welfare vice The antenatal period is carefully safe- arded in Russia A pregnant woman receives ht weeks' leave of absence before and after child- th if she is engaged in industry, during which time is paid full wages The institute contains an enatal department (where the walls of the waiting m were decorated with pictures of deformed ves, varicose veins, hæmorrhoids, and other hological conditions), a birth control centre, an iatric block, a ward for premature babies, an - and in-patients' department for sick babies, a ld guidance clinic, a creche a nursery school, and indergarten These were all used for experimental l research work Although it has accommodation only 750 mothers and children there are 100 tors, with a medical woman at their head, Prof ya Mendeleva The buildings themselves were old l somewhat dilapidated, they had housed a eral hospital before the revolution and the sections ich we saw were not particularly well equipped very clean, and the beds were much closer together n would be permitted in this country

The department for premature infants is particu- ly well organised They are brought here soon er birth from all the maternity hospitals in the n and are placed in incubators or padded hot ter jacketed metal containers and kept in a heated m Everything is done for the baby in this room, that it is never exposed to changes in temperature its condition improves it is transferred to cooler oms and finally to one at normal temperature saw several babies in the hottest room weighing der two pounds Everyone who approaches them s to wear a mask, and resident wet nurses ensure east feeding The survival rate was stated by the sician in charge of the department to be 75 per t, which is considerably higher than our own e use of incubators for premature infants is not, wever, universal in Russia In a large maternity spital in Moscow they are reported to be never d The premature babies are kept warm with ttles, but nursed in the ordinary wards as the ysician in charge has found such methods give ter results

An interesting activity of the institution is the vision of legal advice to safeguard the rights and erests of the mother We saw a queue of women iting outside the consultation room According Soviet legislation divorce can be obtained without r reasons being given on the simple request of either husband or wife, but the father has certain obligations in regard to the maintenance and education of the child up to 18 years of age In the case of an unmarried woman the father is only legally responsible if the woman can prove paternity No stigma or loss of legal status attaches to the illegitimate child It should not, however be concluded that promiscuity is in any way encouraged in the U S S R The communist party in Russia as far as one could gather, does its utmost to discourage profligacy If the unmarried mother is earning wages she is also obliged to contribute towards the support of her children

The Practice of Abortion

Every woman over the age of 18 has the right to have an abortion if she is pregnant and does not wish to have a child The law requires that abortion shall be carried out by a doctor and under hospital conditions The abortorium which I visited in Leningrad was part of a general hospital The doctor in charge told me there were four such hospitals in Leningrad, and the number of abortions performed in this one alone approached 1000 a month Abortion is carried out between the fifth and twelfth weeks of pregnancy, and unless in exceptional circumstances not more often than once a year I was told that a woman is not usually allowed to have more than three abortions, or four at most Patients are admitted over night and retained in hospital for two or three days afterwards They must return on the tenth day to be examined and to receive a certificate of fitness for work We were taken to a small theatre, clean but very simply equipped A girl was lifted on the table strapped in the lithotomy position, and the perineum was shaved and rather casually prepared by a nurse The doctor then pulled down the cervix and began to dilate it rapidly The tip of several of the dilators touched the patient's naked buttocks on their journey from the table to the cervix and none of the scrupulous aseptic precautions employed in this country was taken The doctor told us however, that he had had no case of sepsis in the last series of 6000 cases although four perforations had occurred When the patient began to feel the pain of dilation an anæsthetic ("ether") was administered on a mask by a nurse but only sufficient to dull the senses I was informed that an anæsthetic was usually given for the first abortion, and subsequently, only if the patient asked for it On full dilation the uterus was emptied with ovum forceps and a blunt curette - considerable bleeding occurred While the operation was in progress a second patient was wheeled in fully conscious but she showed no emotion The whole operation took about five minutes and the doctor operated on the second patient without further scrubbing up

In a small labour ward two women were lying close to one another One was recently delivered, the other in the throes of an obviously obstructed labour She was on her back wearing a very abbreviated garment and unscreened from her [illegible] During each pain she bore down with the aid of two arm rests fixed to the sides of the bed The doctor demonstrated to us the use of an obstetric aid which had been invented by a Russian This consisted of a strong webbing binder with a central [illegible] from above downwards At the onset of a pain the nurse pulled on the binder from one side and the doctor from the other This was designed to assist the expulsive action of the uterus. As the fœtal head was apparent to the naked eye overlapping the symphysis pubis, while meconium and a sausage-shaped bag of membranes appeared with each pain, this was perhaps not a good case on which to demonstrate its value. The doctor invited me to stay and watch the "operation" which he proposed shortly to perform on the woman, but unhappily I had not time I saw a room full of stretchers, each of which contained six to eight babies ranging from half an hour to a few days old, all tightly swaddled in what looked like strips of firm coarse sheeting. They were in charge of a very kindly elderly doctor who told us that he had had 60,000 babies through his hands. Several nurses were looking after the infants In the maternity hospitals the babies are not kept in the same room as the mother, but are taken to her only for feeding.

In the contraception clinic women are taught the technique freely, but the doctor in charge said their methods were somewhat behind the times There were numerous obsolete and unreliable appliances in the cupboards alongside the more modern caps and pessaries. I was told that previous to the revolution and in the period of civil war and unrest which followed it for several years "underground" abortion was extremely common and many cases of sepsis and perforation, as well as permanent invalidism, were known to result from it. The right to abortion is regarded by the State as one of the steps towards removing the sex disabilities under which women suffer When a woman attends for either an abortion or contraceptive teaching she is given advice about her sex life, regardless of whether she is married or not. We saw several women receiving this instruction.

Sterilisation is legal and can be done on the request of any woman, without medical reasons The doctor informed us, however, that it is extremely rarely asked for.

Prostitutes and Venereal Disease

In Moscow I saw the prophylactorium where prostitutes with venereal disease are treated medically and at the same time are given an industrial training and education for citizenship. Before the revolution there were 20,000 prostitutes in Moscow alone Vice was then State controlled. We were shown the yellow tickets that used to be issued to prostitutes in Tsarist days. It is now claimed that there are only 300 professional prostitutes in the city, and these are under the observation of the city militia which is largely composed of women. Two militia women were on duty in a desk at the entrance to the prophylactorium, their function being to see that the inmates did not steal any of the hospital property. Patients are required to undertake to reside in the institution for a minimum of two years, and are then rehabilitated, posts being found for them in factories or elsewhere. In practice they seem to be free to leave at any time, but if they remain must submit to the régime. The doctor told us that they did sometimes leave, but practically always returned as they found themselves unable to obtain work and quickly became destitute.

Part of the same institution was set aside for young girls and children who had been sexually assaulted. These girls lived separately from the prostitutes, sharing with them a workroom where they were under supervision all the time.

The patients are allowed to go out freely in the mornings, but never in the afternoon or evening. Various handicrafts are taught and wages are paid for the products sold Care is taken to keep the
evenings fully occupied as this is the time w
women are most restless and difficult. The
about 150 beds and a number of doctors in
including three psychiatrists. One of them
spoke excellent French, told me that then
psychiatrists officially attached to the public
that Moscow was divided into ten districts, ea
a dispensary or polyclinic; and that there
psychiatric service in each dispensary.

The living conditions were extremely pla
everything was clean and there was a
atmosphere of friendliness between staff and p
A considerable number of people of both se
all types and nationalities were being shown
while I was there, and so far as I could jud
was not resented by the patients. A heavy
said to be inflicted by law on any person
proved to have infected another with veneral

Mental Illness

The mental hospital which I visited was
outskirts of Moscow and had accommodat
1500 patients. There were 70 doctors and a ve
nursing staff, including specialists in physical
and handicrafts. This hospital was one of tw
city which dealt with psychotic patients only.
are other institutions for psychoneuroses, for
defectives, for epileptics, and for criminal l
All patients are sent in on a medical recomme
from a doctor in charge of one of the
psychiatric clinics, and discharged only on th
of the medical superintendent or on the ap
of relatives if these are held to be capable o
care of the patient. No charge is made for main
or treatment. There are sections for men
women ; the doctors said that they have a few
from time to time, but I did not see any. The
in-charge gave me reprints of researches car
at the hospital—one on the treatment of
phrenia, the other on the pyrexial treatment of
paralysis by malaria and rat-bite fever, th
based on work recently done in America
been favourably impressed by the effects of
endocrine preparations, notably Gravidan, in
katatonia and involutional psychoses At this
treatment by injection of normal blood and
is also being tried for schizophrenia Acco
the usual continental practice there are no
rooms, and no restraint of any kind is used,
patients are treated by narcotics, of which
and luminal are most popular. Paraldehyd
used. Warm baths are employed to some ext
I saw several patients undergoing this tr
The patients are graded into restless, qu
convalescent

Although the buildings are old and bad
redecoration the conditions for the quiet
appear to be quite good. There are small
from six to eight beds, well lighted and ve
opening on a long and wide corridor, on the o
of which are single rooms. These are t
although simply furnished ; some contain bo
photographs and all have flowers. They were
by patients who were mentally able to ap
them. The day-rooms are at the *end* of the
The patients were mostly occupied, many
weaving on small hand looms. The doctor
that occupational therapy is universal, effor
made to suit the work to the patient, wh
takes the form of handicraft or of particip
the utility services of the hospital. There i
outside the city to which both *men* and

nts who are able to benefit from outdoor work ransferred

e conditions for the restless patients, of whom at many were schizophrenics seemed somewhat ay The rooms were quite bare and most of the nts seemed unoccupied There were female s in all the wards and a few male attendants e section for restless male patients The female nts wear a loose white shapeless overgarment ung from the neck to the feet; these were quite but gave the impression of a long smock not attractive As, however, there is a great shortage ery kind of clothing and the dress of the general lation is extremely poor it would not be reasonable to criticise this The head doctor told me that idential village colony on the lines of that of l in Belgium, where patients are boarded out the peasantry, was about to be started

he convalescent section was housed in a separate ling, rather like a working man's club in England, e were separate dormitories for men and women, they mixed freely in the common rooms and at l times In one room a game of billiards was in ress when we passed, in another patients were ing draughts and chess, some were reading, others ing There were no nurses or attendants in ence patients go to this section for a month's valescence prior to discharge I was told that etimes a mildly psychotic patient is admitted ct to the convalescent section from the city ensaries I asked if psycho-analysis was practised er on psychotics or on psychoneurotics Very e, was the reply

he hospital buildings were situated in extensive dens, not laid out formally but resembling a park n many fine trees I was much impressed by the ndly spirit that existed in the hospital between tors, nurses, and patients

The Doctor's Status

he doctors with whom I talked told me that the rse of medical training, formerly five years, was y, owing to the extreme shortage of doctors cially in the remoter districts, being reduced for time to four and even to three and a half years unior doctor receives about 350 roubles, rising to roubles a month for more responsible work ads of institutions and professors receive higher aries, up to 2000 roubles a month Practically ry doctor is attached to a State hospital or clinic vate practice is, however, permitted even for those o hold special appointments, but there are few ople wealthy enough to employ private doctors, en if they wished to do so In trying to arrive at comparative standard of values it is noteworthy t an ordinary factory worker receives from 100 300 roubles a month, and an overseer up to 600

I was much impressed by the large number of ctors on the staff of all the institutions I visited—every case this was many times in excess of the mbers in this country I understand, however, at they only work for seven hours a day In some ses, I was told, the doctors held two paid appointments in order to earn more money; this would ean a working day of 12-14 hours Everyone in ssia works for a five-day week the sixth day ing a day of rest Doctors, however, and some her classes of workers (including Intourist guides) e allowed to arrange their work so as to take two three days of rest consecutively if circumstances rmit Everyone has a fortnight to a month's liday a year on full pay No doctors seem to ssess motor cars, with the possible exception of a few outstanding people, or in remote districts where a car is necessary to get about The ownership of a car is dependent on State permission and not on financial status.

Special privileges and honours are given to medical men and women or scientists who are doing original or creative work It is said that Pavlov is the only person in Russia who dares to flout authority.

I was everywhere impressed by the simplicity and tranquil kindliness of the hospital atmosphere. In spite of the lack of formality and the absence of hurry or any evidence of the rush-time type of efficiency, everything appeared to be carried out in a capable and orderly manner

SPECIAL CENTRES FOR RADIOLOGY

THE organisation of the fight against cancer is a subject of universal interest. It was the subject of debate at the fourth International Congress of Radiology recently held and the papers read by 28 representatives from the principal countries taking part in the congress, with summaries in three languages, have now been issued in book form.[1] The trend of the Organisation des Krebsbekämpfung is towards centralisation and the scheme which has been evolved in Sweden under the able leadership of Prof G Forssell is generally accepted as a model In that country the surgical treatment of cancer continues to be carried out in the ordinary hospitals; radiological treatment has been centralised in three special centres, to which all cancer patients for whom this form of therapy may be required are referred Radium surgery and therapy by large radium units (bombs) are carried out on lines laid down by the experienced therapists of Radiumhemmet at Stockholm, and deep X ray therapy has also been, to a certain extent, standardised although the individual therapist is not hampered by red tape General teaching of students about cancer and its treatment is given in the ordinary hospitals; radiotherapy is regarded as a post-graduate subject, instruction being given at the special centres

Probably such perfect control is only attainable in a comparatively small country but it is the aim of most national campaigns to group their districts round suitable centres—usually universities and this has been done with marked success in France and Belgium The report from these countries lays stress on the scientific side of the work; every facility for research from the physical, biological and statistical aspect is provided on a generous scale in the same centre where the patient is treated. America appears to be the home of experiment, and the research recorded here into the possibilities of very high tension (million volt) currents merits special mention, while the education of the public has been specially studied It is, however, obvious that the value of propaganda is by no means universally accepted, and this is not surprising in view of the scanty information on prophylaxis yet available. In Germany and Italy special centres are also available, and much research is in progress Nearly every country has some suggestion of value to bring forward Great Britain, represented by Colonel A. B. Smallman, contributed a valuable report on cancer mortality

The fear is sometimes expressed that if the therapy of cancer comes to be closely associated with radiology, the importance of surgery will be overlooked; a study of these papers shows that surgery is still given first place but that the radiologist claims a right to be called into consultation as a clinician in those cases where every resource of modern therapy will be required if the patient is to have a fair chance. The practice of radiotherapy is an exacting specialty, requiring as its foundation a sound and extensive knowledge of surgery, experience in gynæcology and laryngology, and enough knowledge of medicine to follow modern work on hæmatology, serology, the chemistry of the internal secretions, and other lines of research. The ideal centre would have radiologists of this calibre on its staff, and give them the *opportunity of working with colleagues each* possessed of highly specialised knowledge; the clinical experience provided in such a centre would eventually allow the radiotherapist to take his place as a leader in the fight against cancer.

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[1] [illegible] Georg Thieme. Leipzig. [illegible]

TOM TIDDLER'S GROUND

THE communication to the motorist of the nervousness long felt by the pedestrian is the most noticeable *result of the issue of new regulations governing the* behaviour of both at official crossing places in London Ultimately this may be a good thing; during these first few days, however, the hesitant approach of the driver, his uneasy glance to right and left followed by jerky acceleration or sudden application of brakes has, with reason, diminished rather than increased the confidence of the pedestrian. The "Belisha faces" which *Punch* pictured last week as being smug and *condescending as their owners stride across the road* holding up the traffic, are actually harassed by anxiety whether placing one foot on the crossing puts them within the meaning of the Act or only makes them liable to have their toes crushed Early this week some pedestrians stood rather pathetically touching a post and waved the cars on, sometimes, however, omitting to observe the sound golfing rule that "the call through" once made can never be revoked except by permission Those who started to cross looked away rather than towards the cars approaching them and *scuttled over the Tom Tiddler's ground between the* silvered-studs with little confidence that their new ground rights would be respected, in fact some, to their real danger, turned back in alarm when half-way across It seems probable that motor-drivers as well as pedestrians would benefit by an additional regulation enabling the latter to give notice of intention to cross before starting to do so.

CERTIFICATE A

IN an article entitled "The *Lancet* Deludes," a writer in the *Animals' Defender and Zoophilist* (October, 1934) says that we have supplied "grossly misleading information on the way vivisection is practised in England." The passage thus interpreted appears in our issue of Aug 18th (p. 389) and is *correctly quoted as follows* ·

> It should be noted that Certificate A which allows *experiments to be performed without anæsthetics is* granted only for such as are attended by no considerable pain The certificate is in fact not required to cover the operative procedure, but to allow of the subsequent course of the experiment

Our critic is right in pointing out that the full statement in the Government report we were reviewing is that "the *operative procedures* in experiments performed under Certificate A, without anæsthetics, are only such as are attended by no considerable, if appreciable, pain" (our italics) If by using the word "experiments" instead of "*operative procedures*" we had tried to suggest that all that is done under Certificate A is necessarily painless—and this is the charge against us—we should certainly have been guilty of misleading readers But it is perfectly clear from the next four sentences (only the first of which is quoted by our critic) that we are making no such attempt For *they are explicitly devoted to considering how much* pain is actually inflicted.

> . . The certificate is in fact *not required to cover the* operative procedure but to allow of the subsequent course of the experiment. "It must not be assumed," Dr Giles remarks, "that the animal is in pain during the whole of this time In cases of prolonged action of an injected substance, even when ending fatally, the animal is generally apparently well, and takes its food as usual, until a short time before *death The state of illness may only last a* very few hours, and in some cases it is not observed at all"

DANZIG DOCTORS PROTEST

A RECENT *issue of the Danziger Vorposten*, t as its text the alleged word of a Jewish leader, *your children doctors and pharmacists* in order they may take the life of Christians," saw fit to against such pioneers as Ehrlich, Behring, Cal Neisser, Wassermann and against German med "led astray" by such teachers This, say *Danziger Aerzteblatt*, goes beyond what the med profession can put up with in silence, when a German doctor physician is stamped as a Jew in to bring him into disrepute together with the w *famous discoverers who*, *although* of Jewish were an ornament to German science. The p continues · "Even if Germany does at the mo find itself in a state of siege conducted by Jewry, it is still not admissible to deny the tremend services of an Ehrlich or a Wassermann, any more it was at the time of the world war to deny the scien greatness of Pasteur or Lister or Pavlov That please only our opponents throughout the world are lying in wait for us to show such cracks in armour" We quote from the *Munchener Med ische Wochenschrift* of Oct 5th

CIBA

THE Society of Chemical Industry in Basle, p larly known as Ciba, has issued a history of activities through fifty years—1884 to 1934 celebrates the jubilee with a *de luxe* publication. T technical development of the Society, as of any chemical industry, makes informing reading for medical men, but the production by Ciba of medi products, which began rather more than fifty ago, has a more intimate interest Pure the beginning of last century was fostered by re workers who were *frequently* trained at first pharmacists It was due to much of their work the production of scientifically prepared re transferred from the apothecary to the department industrial chemistry, research being conducted lines that were beyond the scope of individual ent Fifty years ago Ciba possessed plant and laborato equipment which enabled it *to make notable* coveries This publication refers to Phytin as product which *might be looked upon* as a real found tion of the Society's series of pharmaceut specialties but frequent evidence will be found in columns of many other valuable products which issued from the Ciba laboratories, to which a biological department has now been added.

NEW PREPARATIONS

EPHEDRINE —British Drug Houses Ltd ha *issued from their propaganda department* a pamph calling attention to the value of this drug in ma conditions such as whooping-cough, asthma and ha fever, obstetric shock and dangerous fall in bl pressure, nocturnal enuresis, and other serious con tions The pamphlet is made up mainly by collation of excerpts from the *British Medical Journ the Journal of the American Medical Association The Lancet*, the claims put forward for the dru various *conditions* being thus supported by clinical authority of reported cases

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CHEMISTRY IN COMMERCE —Under the advis editorship of Mr. M D Curwen, B Sc, Messrs Geo Newnes Ltd are bringing out in about 32 wee parts (at 1*s* each) a compendious book *on Chemistr* Commerce The work differs from ordinary text-bo in being *a series of complete articles* each of th describing first the manufacturing process, and th *the tests and analyses as* carried out in the wo laboratory. Each article is from the pen of the ch chemist of an important commercial undertaking is in a position to write with authority on things as medicinal chemicals and drugs *preserving, sugar refining, milk distribution*, and forth.

ADDRESSES AND ORIGINAL ARTICLES

HÆMOCHROMATOSIS *

y J. H. Sheldon, M.D., F.R.C.P. Lond.
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AND THE GUEST HOSPITAL, DUDLEY

REVIEW of hæmochromatosis is justifiable since ubject is beginning to emerge from that initial of scientific endeavour which is characterised he patient accumulation of data, and the total ber of recorded instances of the disease is now ient to permit some attempts at generalisation study is based on a total of 311 cases, 304 from iterature and 7 which have been under my own rvation. So far as nomenclature is concerned, view is adopted that bronze diabetes, pigment osis, and hæmochromatosis represent aspects of same condition. The disease is undoubtedly a morbid entity, and in spite of its implicit but roven assumptions, hæmochromatosis appears to he best name.

Clinical Features

he earliest recorded onset was at the age of 20,[1] thereafter there is an increasing tendency to elopment of the disease, the incidence reaching aximum in the decade 45–55, when nearly half cases occur. The sex-incidence is very striking females 25 cases have been recorded, but not re than 15 of these can be accepted as undoubted s gives a sex incidence of 20 males to 1 female, the true proportion of males is certainly greater, ce the large number of wrongly reported female es indicates that owing to their known rarity y all tend to be reported, whereas only a very of those in males are nowadays placed on record hough there is an overwhelming preponderance cases in the male sex, it is quite clear that the sease is not sex limited.

Typically, the patient—almost certainly a middle ed man—will present four features, one or more which may, however, be absent. These are an largement of the liver, caused by a hypertrophic rrhosis, a bronze pigmentation of the skin, which ually has in addition a peculiar slaty blue or etallic nuance, a diabetes of severe type, and a rm of sexual hypoplasia. This consists of an teration of the secondary sexual hair—loss of hair the axillæ, chest, and trunk, while the pubic hair very scanty and has a feminine distribution— oupled with impotence. The blood pressure is enerally low, and the blood count reveals no anæmia. The average works out at 4,107,000 red cells, with æmoglobin 80 per cent., which is surprisingly good, nce most of the counts have been made in the erminal stages of the disease.) In course of time he disease is inevitably fatal, death resulting either om the diabetes or from the cirrhosis of the liver. The clinical suspicion that we are dealing with a ery unusual state of affairs is confirmed by the stonishing changes, chemical and pathological, evealed by the study of the tissues.

Pathological Features

The disease is characterised by the following athological features: (a) the deposition of pigments,) fibrotic changes and (c) cellular degenerations in certain of the parenchymatous organs, this being the least prominent.

THE PIGMENTS OF HÆMOCHROMATOSIS

The pigments are of two kinds, named hæmosiderin and hæmofuscin, and the names and distinctions, in spite of much discussion, are still serviceable.

Hæmosiderin is an iron-containing pigment of deep yellow colour, varying in size from fine grains up to large masses which may be visible to the naked eye. There is general agreement that the pigment consists of organic material impregnated with iron, since the iron can be removed by treatment with acid, leaving the original granule still visible (Cook[2]). The iron content of the pigment is high (55 per cent.) but its reactions are not typical of ferric iron and there is no reaction for ferrous iron. Cook considers that it is some form of colloidal ferric oxide, which is physically combined with an organic substrate, a view which is supported by nearly all workers on the subject (cf. Acard,[3] Margain,[3] Rowland[4]). The investigations of Cook were made on pigment from a horse's spleen, and not from hæmochromatosis, but his results agree so closely with those derived from the study of hæmochromatosis (cf. Auscher and Lapicque[5]) that the use of the same term to describe both pigments is justified. Such identity does not necessarily indicate a similar origin, since the iron is in such a simple form that it can only be regarded as an end product, and the same end product may well derive from more than one source of origin or by more than one series of biochemical changes.

Hæmosiderin is the predominating pigment of hæmochromatosis and has an amazingly widespread distribution in the body, the most obvious feature being its extreme tendency to affect gland cells. This applies to the glands of both external and internal secretion. The greatest amounts are found in the liver and pancreas, but there is not a secreting gland in the body that may not be affected, and in a recent case I even found it in the male breast. The epithelium of the excretory ducts may contain hæmosiderin, but the amount is not large, and it is mainly confined to the smaller ducts. The endocrine organs are extensively affected. The parathyroids have contained enormous amounts in every case in which they have been examined. The thyroid is almost always affected and the amount may be very large. The suprarenal glands always contain hæmosiderin in the zona glomerulosa but the remaining parts usually escape. The islets of Langerhans are affected in 50 per cent. of the cases, the degree varying from fine grains of pigment up to large amorphous masses replacing the remains of the islet. The anterior lobe of the pituitary is affected, some [illegible] very heavily, while the posterior part usually es [illegible]. In two personal cases the pigmentation was [illegible] heavier in the basophil cells than in the [illegible] and this may have some bearing on the [illegible] of sexual hypoplasia. In somewhat [illegible] tion to this list are the kidney [illegible] epithelium of the testes. Th [illegible] moderate degree of pigmentation [illegible] in most cases to the [illegible] second order, while [illegible] altogether.

Striated muscle is [illegible] than is generally [illegible] practically never [illegible] muscle is [illegible] cases often [illegible] may be [illegible] cases of [illegible] muscle [illegible] to the activity of the muscle, being present in much greater quantity in the tongue than in the quadriceps

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* The Bradshaw lecture delivered before the Royal College of Physicians of London [illegible]

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In view of the huge deposits of pigment in various regions of the body, it is to be expected that considerable amounts will be found in the reticulo-endothelial system. It occurs in the Kupffer cells of the liver, the alveolar endothelium of the lung, and the spleen Here it especially affects the capillary endothelium This tissue is constantly affected in most organs to some extent, but reaches its maximum in the testis, where the outlining of the endothelium of the capillaries and lymphatics by the deposits of pigment may be a very marked feature The bone-marrow almost entirely escapes, and if pigmented at all, it is only in small amount

Hæmosiderin is frequently found in the cartilage, both of the joints and of the respiratory tract, and may occur in the synovial endothelium of the joints to a sufficient extent to cause obvious naked-eye pigmentation. In all structures where the amount of pigment in the true cells is large, there is nearly always pigmentation of the connective tissues. This reaches its greatest degree in organs such as the liver and pancreas In the former especially, the amount in the fibrous tracts may overshadow that present in the liver cells The lymph glands all over the body contain pigment, the amount depending on the region they drain The portal and pancreatic glands may be transformed into huge masses of pigment completely obliterating the normal structure.

Hæmofuscin is a dark pigment, almost black It does not contain iron, and it is not a form of hæmosiderin which has failed to react to stains for iron. Unlike hæmosiderin, it contains sulphur (3 7 per cent, Rosenfeld), and it is probably related to the melanins It is either identical with, or closely related to, the "brown" pigment of old age and atrophy. Its inevitable presence, its wide distribution and great amount, form a distinguishing feature of hæmochromatosis

This pigment occurs to a slight extent in the epithelial cells of the glandular organs, and with more frequency in the connective tissues, especially of the spleen There is nearly always a large quantity in the heart muscle Smooth muscle is its site of election, where the large amount and the constancy of its presence form a striking feature It affects especially the smooth muscle of the genital tract—the amount in the seminal vesicles may be enormous—and of the alimentary canal Much of the naked-eye pigmentation of the bowel is due to this cause Here it reaches its greatest extent in the duodenum and jejunum, and affects especially the longitudinal muscle The smooth muscle of the blood-vessels, particularly of the arteries, is also heavily pigmented, and in some cases the vessels can be traced by the naked eye to their small ramifications by their brown colour

SCLEROTIC CHANGES

Besides the deposits of pigment, a *sclerosis* of certain organs is always present A cirrhosis of the liver is an inevitable feature of the disease and is usually of the hypertrophic type, the liver weighing up to 4000 g The pancreas is also constantly affected, and although the degree is usually less than in the liver, cases are on record where the fibrosis was extreme.[6 7] In contrast to the liver, the pigmentation and cirrhosis do not always go hand in hand in this organ, since there may be an advanced interstitial pancreatitis with only a small amount of hæmosiderin[8] The spleen nearly always shows fibrosis, and this is also common in the sal glands, heart, and thyroid, it is rare, howeve the remaining organs, and is usually unrelated the amount of pigment present. Thus both parathyroids and choroid plexuses have a amount of hæmosiderin while fibrotic changes never been described The lymph glands are quently affected, and several authors have remar that in these structures the sclerosis goes hand hand with the pigmentation[9] Fibrotic changes so widespread that it seems almost justifiable to the term "polysclerosis"

DEGENERATIVE CHANGES

Degenerative changes in the parenchymatous do not occupy a prominent place in hæm apart from direct mechanical damage to the cell the pigment Pure degenerative changes are, ever, found in most cases in the germinal of the testes and in the islets of Langerhans latter structures the number is greatly reduced, even where there is no pigment it is a common to see them replaced by a thick ring of fibrous surrounding a collection of degenerate cells

Chemical Changes †—A chemical investigation the tissues reveals an astonishing state of affairs, most striking feature being the great increase of The blood is the only tissue which has never found to have an increase of iron,[10 11] while in brain and colon an increase is exceptional remaining tissues may all contain an excess of ranging from about twice normal in organs such the urinary bladder to between 50 and 100 normal in the liver, pancreas, and salivary gla Striated muscle contains about four times the amount of iron, and owing to the great extent this tissue the muscles come next to the liver total content of iron. An estimation of the amount of Fe deposited in the body by the time death was carried out in two cases, the figures ing out at 27 g and 35 g. Inasmuch as 38 g been recorded in the liver alone,[12] it is that the range of total iron extends from about to 50 g.

A spectrographic examination carried out in junction with Mr. H. Ramage, of Norwich, sh that nearly all the tissues had an increase of c this being generally parallel with the increase iron, and reaching its greatest extent in the (× 4) and liver (× 8)

It is not surprising that there should prove to be a turbance of calcium metabolism (1) The parathy glands always show an extreme degree of with hæmosiderin, and although the blood calcium raised, there may be X ray evidence of osteopor (2) It is a well-known fact that in some mysterious calcium and iron are synergistic metals, of which would be a further instance (3) Extensive deposits calcium have occasionally been found in the spleen lymph glands In the spleen both Ungeheuer Pappenheimer[13] reported extensive deposits of calcar material, mostly as an incrustation of the connec tissue and elastic fibres In the lymph glands a but more advanced state of affairs was described Pappenheimer and by Schuppisser.[14] In the latter the glands were infiltrated by a calcareous scaffold resembling the skeleton of a radiolarian, which be red to be unique, and summed up as "an entirely ular form of incrustation with calcium and iron"

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† The following statements are largely based on an I have recently been able to make on five cases of the for three of which I am indebted to Dr C J. Pa St James's Hospital, Leeds, Dr R A McCance of K College Hospital, London, and Dr W Stewart of the Infirmary, Worcester. Details of this work will be pu elsewhere

exception was provided by the lung trachea, and nary bladder, which had less calcium than the trol tissues, and it is curious that in these three ues there was a marked increase of potassium examination of the alkali metals showed that st tissues had an increase of potassium but of degree, an exception being the striated muscles ich, however, *showed an increase of sodium* ere is therefore some associated disturbance of alkali metals in this disease It has been known some time that the liver in hæmochromatosis has increase of copper, and a spectrographic examinan showed that this was true of all the 16 tissues amined, with the exception of the suprarenals l jejunum, which had normal values, and the ney, *which had less than normal The low copper* ue of the kidney confirms the previous work of rkel[18] The striated muscles were carefully amined, and specimens from the psoas, quadriceps, l sartorious all had about twice the normal amount copper This is the general order of increase in st of the tissues According to Herkel the zinc tent is normal By spectrographic analysis there s a definite lowering of the manganese content the liver, the values being about a quarter of the erage normal An examination of the tissues for phur showed that an increase was limited mainly the omentum and upper part of the bowel, which probably to be correlated with the local deposits hæmofuscin There is therefore hardly a metallic stituent of the body which is not affected in one gan or another, and it is evident that in hæmoromatosis we are presented with a problem involving ne extremely obscure features of cell metabolism

Discussion

An adequate explanation of hæmochromatosis st at least be capable of embracing the following tures (1) the deposits of hæmosiderin and hæmocin (2) the age incidence, (3) the sex incidence, the cirrhosis of the liver and other organs (5) the rease of copper The remaining features of the ease appear to be derivative in one way or another

It is not surprising that numerous attempts, ting back to Quincke (1877) and Marchand (1882), ve been made to derive the hæmosiderin from the st obvious source of iron in the body the hæmobin of blood The only satisfactory mechanism this is to assume that the small amount of iron t daily from the wear and tear of the hæmoglobin nover, amounting probably to about 6 mg [illegible] for no reason retained in the tissues This is open, wever, to such grave difficulties that there seems be no alternative but to seek elsewhere for the urce of the iron

These difficulties are (1) The deposits cannot be due increased destruction of blood, for there is neither dence of this nor of the increased blood regeneration ich the normal blood count would necessitate (2) If pigment were derived from hæmoglobin one would ect its distribution to follow that found when it is own to have its origin, as in pernicious anæmia or perimental hæmolysis The relative immunity of the en bone marrow and kidneys and the heavy affection organs such as the pancreas and heart provide a marked trast with siderosis (3) It is to be presumed that iron would be set free in the tissues concerned in the ak up of hæmoglobin—i e, the reticulo-endothelial stem—and thence deposited in the remaining organs by process of transport While no doubt there is some gmentation by transport' in hæmochromatosis the work of both Cappell[44] and Polson[8] has shown clearly that the disease cannot be produced in this way By the injection of iron into rabbits over a long period of time, Polson raised the iron content of the liver above that found in hæmochromatosis, without reproducing the human disease In particular there was no cirrhosis of the liver and organs such as the pancreas, and striated muscles almost entirely escaped pigmentation (4) It is all the more difficult therefore to fit in the cirrhosis of the liver—let alone that of the pancreas—for if the hepatic changes be regarded as the cause of the disturbance of iron metabolism, it is difficult to see why all cases of portal cirrhosis do not also suffer from hæmochromatosis

Failing an origin from hæmoglobin one must look to the intracellular iron as a possible source, and even within the limitations of our present knowledge we can envisage two possible ways in which it might be concerned

The cytochrome mechanism of the cell might be at fault, and I should be lacking in local patriotism as well as in imagination if I omitted to consider this, since under the name of myohæmatin, this pigment was described by the late Dr MacMunn of Wolverhampton in 1884–86 We owe most of our present knowledge to Prof D Keilin, F R S who has renamed the pigment cytochrome,[16] and I am much indebted to him for undertaking an examination of the tissues from a case of hæmochromatosis No abnormality was found, the cytochrome bands of heart and muscle having their normal position The structure of cytochrome in hæmochromatosis is therefore normal, but although this is an important fact it is not unexpected, since this pigment maintains such a regular structure, so far down the scale of life, that it is unlikely that a disturbance of its structure would allow a patient to live long The rapidity of death following CN poisoning provides an illustration of this The iron of cytochrome is without doubt subject to replacement in health as a result of the normal wear and tear of the tissues, though we are ignorant of the details of this process, and the error in hæmochromatosis might lie here In Warburg's famous model of tissue respiration the iron is pictured as swinging backwards and forwards like a pendulum in its work of fetching oxygen from the outside and surrendering it to the tissues. One might adapt this analogy to hæmochromatosis by thinking of the iron (1) as attached to a normal pendulum, but (2) unable for some reason to carry out its normal number of swings, and (3) being left, when due for replacement, in a form which the cells are unable to excrete

This possibility has the following points of recommendation (1) It would explain the obvious avidity of the tissues for iron (owing to the need for replacement) at a time when the body already contains huge deposits of useless iron The relation of iron to the cells in hæmochromatosis appears to be on all fours with that of the lobster to the lobster pot The iron finds it easy to get into the cell, but supremely difficult to get out (2) It would explain the fact, noted as far back as [illegible] by [illegible] and de Massary, that "the cell elements most [illegible] are those whose metabolism is greatest" [illegible] expect the wear and tear on the respiratory [illegible] to increase with the metabolism of the cell (3) [illegible] the increase of copper in the tissues [illegible] relation with the hæmosiderin for [illegible] shown that copper is necessary for the [illegible] and that it is possible to increase the [illegible] content of the yeast cell by feeding [illegible] copper (4) It would also explain the curious fact that a patient [illegible] disease can live for [illegible] the actual [illegible] structures in the cell are [illegible] until they were [illegible] This is what the [illegible] there is [illegible] although the mechanical pressure of the pigments increases until it actually kills and bursts the cell

An alternative possibility has been provided by the recent work of Zondek and Karp[18] They found in animals that the amount of intracellular iron increased with the age of the cell from infancy up to early middle life, there being in health a difference of up to 200 per cent in this respect They considered that this was due to the deposit in the cells of a new type of iron compound, and summarised their views by saying that the iron content of a cell is a measure of its senility There are indications that this is also true of human beings, and future work on hæmochromatosis will have to consider the possibility that the deposits of hæmosiderin may be caused by an increase in the length and steepness of this process

This possibility has the following points in its favour (1) It would explain the fact, evident on histological examination, that in the liver, for instance, the amount of pigment in the old cells is always immensely greater than in the young cells The cells of the newly formed areas of regeneration are always scanty in pigment and may have none at all. Pigment has never been found in this disease in the rapidly growing cells of a primary carcinoma of the liver. (2) It also helps to understand the deposits of hæmofuscin, since these may be approached in a similar way (see below)

Further knowledge may show that there is no antithesis between these possibilities, but it appears certain that the origin of the hæmosiderin is to be sought in a disturbance of the metabolism of the intracellular iron

In considering the deposits of hæmofuscin there seems no adequate alternative to the view that these are based on an abnormal metabolism of the cells concerned, particularly those of smooth muscle It is likely that this is part of a general disturbance of the metabolism of melanin, which has to be regarded as one of the essential features of hæmochromatosis

It may be pointed out (1) Hæmofuscin is probably a melanin, a view which is supported by the sulphur content of the pigment and of the tissues where it is deposited The distribution of the increase of sulphur in the tissues shows that it can have no relation to hæmosiderin (2) The *fact that hæmofuscin may be identical with the* " brown " pigment of atrophy and old age is no objection to its importance in this disease, for it occurs in unprecedented amount It is curious that the structure of hæmosiderin is also not peculiar to the disease, and that on one possible explanation it may be due to an exacerbation of the normal process of ageing of the cell. The deposits of hæmofuscin could therefore also be explained in a parallel manner (3) There certainly is a disturbance of melanin in hæmochromatosis, and it is simplest, with our present knowledge, to link the deposits of hæmofuscin with this It is evidenced by (*a*) the great deposits of melanin in the epidermis which are the principal cause of the clinical pigmentation, and (*b*) the case of Uhlenbruck[19] where congenital hæmochromatosis was associated with melanuria (4) In view of what follows below, it is of interest to note the liability of melanin to errors of inheritance, as shown by albinism and alcaptonuria.

It has already been noted that the deposits of copper can be brought into possible relation with those of hæmosiderin, and it is of extreme interest that, even with our present scanty knowledge of the functions of this metal, it can also be brought into contact with melanin This depends on the work of Cunningham,[20] who brought to light the very curious fact that, apart from the tail feathers of the touraco, the wall of the ink sac of the octopus contains the largest amount of copper known to occur in living organisms Since the ink sac has to be capable of the rapid production of large quan of melanin, Cunningham investigated the connexion between these factors, and showing that copper exercises a distinct cata effect on the production of melanin by the of its precursors The *importance* of copper hæmochromatosis would seem to lie along lines as these, and it is not possible to accept the view Mallory that the disease is produced by copper poisoning

Mallory[21] in 1920 stated that he had succeeded ducing a pigment cirrhosis in rabbits by feeding with copper, and his results were confirmed by Hall Butt[22] The pigment produced was not but from its staining reactions it was considered to hæmofuscin. Mallory therefore postulated that in hæmochromatosis hæmofuscin is the first pigment appear, and that it gradually changes into Later workers (cf Flinn and von Glahn,[23] Pol Herkel[15]) were unable to confirm Mallory's results, and in addition found that the pigment des by him could be produced by feeding the animals diet of carrots Mallory repeated his previous (Mallory and Parker, 1931[25]) and considered he substantiated his previous claims, but it cannot be that the experimental work carries conviction, and is no doubt that the weight of the evidence is again view that feeding with copper causes either a cirrhos changes of the same nature as those of human h chromatosis The thesis that the disease is due to copper poisoning is open to further objections: (*a*) work was done before the modern knowledge of ubiquity of copper in living tissues, and before it realised that there is a continued ingestion of small of *copper* in *food This does not sound so* it once did (*b*) No characteristic symptoms attri to chronic copper poisoning have been described There is no special incidence of hæmochromatos Korea, a country where owing to the widespread brass for cooking purposes there are all the factors in favour of Mallory's thesis.[27] (*d*) The peculiar incidence is left unexplained (*e*) In order to expla deposit of hæmosiderin, Mallory considered that the of copper was to cause hæmolysis The iron is ther ultimately derived from hæmoglobin, a view which already been rejected on other grounds

One may next inquire how long an abnormal bolism, such as has been suggested, may be in ence The deposits of hæmosiderin furnish the clue. One has to account for 25 to 50 g occ in an individual of from 45 to 55 years of age. average intake of iron would provide a more adequate amount for this purpose, if all the were retained, and would place the duration of disease at roughly ten years. We know, howe from the work of McClure,[28] Howard and St and Dry,[30] that all the iron is not retained. duration of the disease has therefore to be co spondingly lengthened, and the actual origin undoubtedly to be placed further back than appearance of clinical symptoms. Dry has rece recorded the results of careful experiments on iron balance of his patient, and it is evident figures that the degree of retention of iron on ordinary diet is too small to be capable of estimation, which places the origin of the di many years before the appearance of sympt The length of time involved is so long that it ne sarily raises the question as to whether the di may not be congenital. This is especially so, the retention of iron from whatever cause mu encroach on the amount required from the food to maintain a normal blood picture If the di were congenital there would be a maximum retention of 2 5 mg. (i e, in the severest cases 50 g. iron at death), while in my last two cases

If this amount would be required There is there o an ample margin in the food iron to provide us amount and also that required for blood formation

The natural history of the disease provides at this int an important contribution, for if the disease re congenital, one would expect to find cases th a familial or hereditary incidence This is rtually so, though the reported instances are rare, d it is curious that they have attracted so little ention

1) Boland and Curran[31] Two brothers with cirrhosis the liver and pigmentation of the skin Biopsy in both es showed hæmosiderin in the sweat glands

2) Eusterman[32] A brother of the patient had an arged liver and pigmentation of the skin

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5) Wegener[35] The father during the last years of life l a "striking grey colour of the face and died of a liver ease" One brother had always had some pigmenta n of the face Of the remaining two brothers, one reloped an enlarged liver at the age of 16 At the age of further symptoms of hæmochromatosis appeared, and died at 50 with pigmentation of the skin, loss of hair, l diabetes In the younger brother, aged 41, an enlarged r was discovered at the age of 32, and he had always l a "yellowish grey colour" Later there was loss of r and impotence The pigmentation of the skin at the ie of writing suggested 'an alloy of lead and bronze"

6) Similar but less well authenticated instances have n reported by Abel Girard, and Kissel[7] Nadler and ugrud,[36] Saundby[37] Uhlenbruck,[19] Vanderhoof and tcheson[38] I have been able carefully to investigate family history in four cases Two were completely tative In one an only brother had died of diabetes, hout evidence of hæmochromatosis, and there was a g history of enlarged liver in both the mother and ther's sister In the fourth case the patient had five thers, all of whom I was able to see The two youngest thers (aged 38 and 34) had slight but definite pigmenta n of the type peculiar to hæmochromatosis (i e, with a tallic sheen)

There are therefore at least five certain instances ere brothers have suffered from the disease o evidence of a hereditary transmission of the ease is confined to three case reports, none of ich is convincing since the nature of the disease the parent was not confirmed by autopsy evidence, the remarkable case of Frisch is hard to explain any other basis The presence of these cases vides irrefutable evidence therefore that hæmo omatosis may at times be congenital in nature l they offer strong support to the view, advanced other grounds that the disease is an inborn or of metabolism

t may be argued that the age incidence is difficult explain on this basis, but against this may be set example of an undoubted congenital disease h as Huntingdon's chorea the manifestations of ich do not appear until middle life is reached may also be pointed out that although there have n no fully developed cases before the age of 30 re are numerous records in which the initial nptoms have appeared in this period These have n found at birth,[7] and at the ages of 7,[illegible] 16[illegible] 17,[40] 18,[41] 19,[42] 20[43] This occasional early emergence of symptoms is just what one might expect if the disease were an inborn error of metabolism, taking normally some 40 to 50 years to produce its symptoms It may be added that in the rare congenital cases the age incidence was within the average limits of the disease

The peculiar sex-incidence may also be approached on this basis and it is noteworthy that alternative theories of the disease have all been unable to meet this feature The female cases are too well attested to permit of the assumption that there is a sex-linked inheritance, but in general terms it is easy to imagine an error of enzymic inheritance to which the male sex is either peculiarly liable, or which is more easily capable of expression in the male.

It remains to account for the cirrhosis of the liver and other organs. Hæmochromatosis has been regarded by some as merely an extension of changes found in all cases of cirrhosis, but the view that the hepatic changes are the cause of the disease is difficult to sustain

There is no doubt that the cirrhosis of the liver in hæmochromatosis is exactly similar in nature to multilobular cirrhosis, and that many of the manifestations of the disease are explicable on this basis, particularly if the changes found elsewhere in portal cirrhosis are taken into account The view that hæmochromatosis is only an extension of portal cirrhosis is unsatisfactory, however since it leaves a large part of the disease unexplained It does not explain (1) The rarity of the disease (2) Its overwhelming incidence in the male (3) The widespread deposits of hæmosiderin and hæmofuscin, no approach to which is found in portal cirrhosis (4) It does not explain the amount of iron in the liver It is true that in portal cirrhosis the liver contains more iron than normal but if the one were really an extension of the other, one ought to find cases having an intermediate amount, which are conspicuously absent Further, in some cases of hæmochromatosis the pancreas may contain as high a percentage of iron as the liver, which is difficult of explanation on these lines (5) The cirrhotic changes are not limited to the liver, as has already been stated (There has been much discussion concerning the relation of the pigmentation to the fibrosis On the whole it appears most likely that the cirrhosis of the liver is produced independently of the pigmentation and that the same is true of the pancreas and other glandular organs The pigment may perhaps increase the amount of the fibrosis by acting as an irritant and to judge from the lymph glands, this is especially likely to occur where it is extracellular, but it is unlikely that the pigment is the direct cause of the sclerotic changes)

The presence of the cirrhosis is not inimical to the theory of a congenital origin since a cirrhosis of the liver occurs in other congenital states (e g hepato lenticular degeneration) The cause of the cirrhosis in hæmochromatosis is probably ultimately referable to the abnormal metabolism of the parenchymatous cells, and it is for this reason also that a sclerosis of some degree develops in so many of the organs and indeed seems to vary in intensity with their level of metabolism

Summary

The view advanced as the most reasonable explanation of hæmochromatosis is that it should be classed as an inborn error of metabolism which has an overwhelming incidence in males, and which at times actually has a familial incidence The exact nature of this metabolic error is unknown but it concerns the inner metabolism of probably all the cells of the body and shows itself in two ways—by the production of [illegible] pigment in certain situations, especially smooth muscle, connective tissue and hough the mechanical pressure of the pigments increases til it actually kills and bursts the cell

An alternative possibility has been provided by e recent work of Zondek and Karp[18] They found animals that the amount of intracellular iron creased with the age of the cell from infancy up early middle life, there being in health a difference up to 200 per cent. in this respect. They conlered that this was due to the deposit in the cells a new type of iron compound, and summarised eir views by saying that the iron content of a cell a measure of its senility. There are indications at this is also true of human beings, and future ork on hæmochromatosis will have to consider the ssibility that the deposits of hæmosiderin may be used by *an increase in the length and steepness of* is process

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Mallory[21] in 1920 stated that he had succeeded in producing a pigment cirrhosis in rabbits by feeding them with copper, and his results were confirmed by Hall and Butt[22] The *pigment* produced was *not hæmosiderin*, but from its staining reactions it was considered to be hæmofuscin. Mallory therefore postulated that in human hæmochromatosis hæmofuscin is the first pigment to appear, and that it gradually changes into hæmosiderin Later workers (cf. Flinn and von Glahn,[23] Polson, Herkel[15]) were unable to confirm Mallory's experimental results, and in addition found that the pigment described by him could be produced by feeding the animals on a diet of carrots Mallory repeated his previous work (Mallory and Parker, 1931[25]) and considered he had substantiated his previous claims, but it cannot be said that the experimental work carries conviction, and there is no doubt that the weight of the evidence is against the view that feeding with copper causes either a cirrhosis or changes of the same nature as those of human hæmochromatosis. The thesis that the disease is due to chronic copper poisoning is open to further objections: (*a*) The work was done before the modern knowledge of the ubiquity of copper in living tissues, and before it was realised that there is a continued ingestion of small amounts *of copper in food This does not sound so dangerous* as it once did. (*b*) No characteristic symptoms attributable to chronic copper poisoning have been described[26] (*c*) There is no special incidence of hæmochromatosis in Korea, a country where owing to the widespread use of brass for cooking purposes there are all the factors present in favour of Mallory's thesis[27] (*d*) The peculiar sex incidence is left unexplained. (*e*) In order to explain the deposit of hæmosiderin, Mallory *considered that the action* of copper was to cause hæmolysis The iron is therefore ultimately derived from hæmoglobin, a view which has already been rejected on other grounds

One may next inquire how long an abnormal metabolism, such as has been suggested, may be in existence The deposits of hæmosiderin furnish the only clue. *One has to account for 25 to 50 g* occurring in an individual of from 45 to 55 years of age. The average intake of iron would provide a more than adequate amount for this purpose, if all the iron were retained, and would place the duration of the disease at roughly ten years We know, however from the work of McClure,[28] Howard and Stevens, and Dry,[30] *that all the iron is not* retained. The duration of the disease has therefore to be correspondingly lengthened, and the actual origin has undoubtedly to be placed further back than the appearance of clinical symptoms Dry has recently recorded the results of careful experiments *on the* iron balance of his patient, and it is evident from his *figures* that the degree of retention of iron on an ordinary diet is too small to be capable of exact estimation, which places the origin of the disease many years before the appearance of symptoms The length of time involved is so long *that* it necessarily raises the question as to whether the disease may not be congenital This is especially so, since the retention of iron from whatever cause must not encroach on the amount required from the food to maintain a normal blood picture If the disease were congenital there would be a maximum daily retention of 2 5 mg (i e, in the severest cases with *50 g. iron at death*), while *in my last two* cases only this amount would be required There is there an ample margin in the food iron to provide amount and also that required for blood formation

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It remains to account for the cirrhosis of the liver and other organs. Hæmochromatosis has been regarded by some as merely an extension of changes found in all cases of cirrhosis, but the view that the hepatic changes are the cause of the disease is difficult to sustain

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Summary

The view advanced as the most reasonable explanation of hæmochromatosis is that it should be classed as an inborn error of metabolism which has an overwhelming incidence in males, and which at times actually has a familial incidence The exact nature of this metabolic error is unknown but it concerns the inner metabolism of probably all the cells of the body, and shows itself in two ways—by the production of a melanin pigment in certain situations especially smooth muscle connective tissues and

skin, and by the formation of an iron-containing compound in nearly all the tissues This iron pigment is not due, so far as is known, to any abnormality in the structure of the intracellular respiratory mechanisms, but either to some feature which gives the iron engaged in this function a shorter life than normal, and then leaves it in a form unfit for excretion, or to an exacerbation of the normal increase of iron with the ageing of the body. Copper has points of contact with both these aspects of the underlying abnormality. Although the error of metabolism is congenital in origin, it does not of itself produce any disturbance of health beyond initiating a process of cirrhosis in many organs—particularly the liver and pancreas—which once started proceed to produce their own characteristic symptoms In the course of time the products of this error of metabolism gradually accumulate as the characteristic pigments, and ultimately lead to the final stage of the disease with its characteristic clinical symptoms The process is so slow that these do not usually appear till middle life, although in rare cases they may appear much earlier This hypothesis of an inborn error of metabolism appears to be the only one which will encompass the enormous array of facts provided by the clinical, pathological, and chemical study of the disease

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Hendon Cottage Hospital.—Mrs Stanley Baldwin has opened the new paying-block at this hospital which is to be known as the Andrew wing It has 12 single wards and two cubicle wards

THE TREATMENT OF TETANUS

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No one will deny that the death-rate from tetanus is still extremely high This disease is in many cases peculiarly tragic, often being associated with the most trivial injuries, and though it is not particularly prevalent in this country the number of deaths per annum is sufficiently great to warrant the serious pursuit of all possible methods of treatment. With the object of improving this, experiments have been proceeding during the last three years on the following assumptions: If a person recovers from tetanus he recovers completely—that is, there is no residual muscular impairment. This means that the toxin can be eliminated completely and leave the nerve-cells intact. Antitoxin even in very large doses is apparently incapable of removing toxin already fixed to the nerve-cells, but the toxin is probably oxidised slowly. If the patient can be saved from exhaustion by prolonged spasms and kept supplied with a sufficiency of water and foodstuffs, it should be possible to keep him alive long enough to enable the oxidation to occur. Two ways of doing this were considered: (1) prolonged anæsthesia either by inhalation or injection, (2) the use of curara to paralyse the muscular mechanisms and abolish fits, the patient being kept alive by artificial respiration in a such as that introduced by Drinker and Shaw (19 These assumptions have been found to be inadequate to cover the possible causes of death, but more will be said of this later.

Rabbits have had to be used as experimental animals owing to their reasonable size and susceptibility to tetanus toxin, and to the fact that the cat and dog, which are more useful animals from several points of view, are relatively insusceptible to tetanus toxin.

Prolonged Anæsthesia

The effects of prolonged administration of nitrous oxide and ether have been noted on normal rabbits The rabbits were made to breathe through a mask into a metal box with an air-tight lid and containing caustic soda for the absorption of exhaled carbon dioxide Oxygen and nitrous oxide were led into the box, the amounts of these being independently variable If necessary, ether could be added by bubbling the gases through an ether bottle With this simple apparatus it was found easy to keep normal rabbits quiet for many hours without any harmful effect. Gas-and-oxygen was also tried in combination with dial, paraldehyde, or urethane These experiments showed that rabbits could be kept quiet for long periods by giving gas-and-oxygen in the day time and then a dose of injected anæsthetic to carry through 8 to 10 hours of the night ormal rabbit was anæsthetised for 50 hours connuously by this method, and it recovered rapidly d completely Several experiments of this nature ade it clear that it would be possible to keep animals næsthetised for considerable periods of time and to aintain them in good condition Rabbits with eneral tetanus produced by inoculating tetanus toxin to the right hind leg were then treated in this way he dose of toxin was such that all of 12 control bbits died, most of them on the fourth or fifth day

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* Working for the Medical Research Council The Council have also defrayed the cost of the apparatus used, and we are indebted to them for the services of a laboratory attendant, Mr J D Kent, whose willing coöperation has made it possible to carry out the experiments

may be stated at once that in no case were we uccessful in curing any of the inoculated rabbits, the ain difficulty encountered being the supervention of roncho pneumonia in these animals which have a elicate pulmonary tissue This occurred with injected næsthetics such as urethane as well as with inhalation næsthesia Another difficulty was the administration f the food essential to small animals having a rela vely high metabolic activity Intravenous therapy ith glucose was not successful owing to the large mounts necessary Nevertheless some interesting bservations were made which give useful information r treating the human disease

It was found possible to control generalised fits by he administration of gas-and oxygen with some other dded occasionally When a crystalline anæsthetic uch as urethane was given in the early stages of eneralised convulsions it was possible to get the abbits so quiet that they did not have a fit on slight timulation When this stage was reached animals, hich owing to the fits could not eat before readily ook green food Although in no case was a " cure " ffected we succeeded in keeping two animals alive ufficiently long for the general spasms to have ceased, nd for one of the rabbits to be able to eat green ood without having urethane They died, however, rom broncho pneumonia nine days after inoculation

Nevertheless the above experience in dealing with hese animals convinced us that treatment with ontinuous gas-and oxygen was likely to be beneficial n human cases We were indebted to Prof Graham impson for permission to make use of the method n a severe case of his in which treatment with ntitoxin was proving inefficient

The case was that of a girl, 16 years old who had eceived a gunshot wound in the left temple from close uarters No antitoxin had been given at the time nd in six days trismus had appeared When admitted o hospital trismus was present and she was given 30 000 .S A units of antitoxin intrathecally and 10,000 units tramuscularly Next day she was given a further 2,000 units intravenously Shortly before she was seen y two of us on the seventh day after injury, the condition ad advanced rapidly, opisthotonus and rigidity of the hole body being marked although she had been given vertin per rectum While under the waning influence avertin she was anæsthetised by open gas-and-oxygen r excision of the scalp wound Perfect relaxation was tained and the trismus disappeared The wound was cised and Prof J W Edington isolated tetanus bacilli om the tissues With the elimination of the gas, gidity and other symptoms returned, in six hours e was having fits and was very rigid She was ven morphia gr ¼ Owing to the difficulty of ranging extempore a relay of people to give gas-and-xygen continuously, there was a considerable interval fore continuous use of this form of anæsthesia was stituted This was continued for eight hours Fits re completely controlled but eventually the patient's spiration became shallow and failed Six hours before ath her temperature was 101 4° F , four hours later it as 104° F and just before death it rose to 108° F uring these six hours the fits were completely controlled

This case is quoted because it illustrates two oints (1) It is probable that human fits can be controlled by gas-and-oxygen, though this case is not quite clear-cut owing to the previous administration of avertin and morphia (2) It is commonly supposed that the high temperature reached in many cases of tetanus is due to the great output of energy during fits This was not true in this patient since she was certainly free from fits while her temperature was rising It is clear that the high temperature in many cases must contribute very largely to the eventual fatal outcome, but there is no reason why it should not be combated by the usual methods employed in hyperpyrexia, so long as the patient can be kept free from fits As far as we know no attempts are at present made to deal with this very serious complication The case quoted by Cole (1934) appears to show the same phenomenon In this case the temperature rose to 108° F in spite of the patient being free from fits What the cause of this rise in temperature is we are unable to say

Curara and Curarine

Experiments have also been carried out to ascertain to what extent curara might be effective if used in adequate doses The first experiments were carried out with crude curara, *for which we are indebted to* Sir Charles Sherrington It will suffice to say, with regard to these experiments, that we found it possible to produce complete muscular paralysis in normal rabbits and to keep them alive by artificial respiration in a Drinker's apparatus specially constructed to take laboratory animals (For the design of this apparatus we are greatly indebted to Dr Edgar Schuster of the National Institute for Medical Research The work was admirably executed by W Bush of the Dunn Pathological Department, Oxford) It is, however unnecessary to dwell on these early results as Sir Henry Dale generously supplied us with 500 *mg* of pure curarine which was isolated by Dr H King at the National Institute for Medical Research at Hampstead This material is freely soluble in water, keeps well in solution, and can be boiled The effective doses of this substance have been worked out and its pharmacological properties relevant to the present inquiry noted

ACTION OF CURARINE ON CATS AND RABBITS

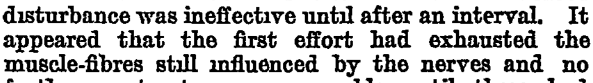
A solution of the drug in physiological saline either 1 0 or 0 1 mg per c cm has been injected intravenously or subcutaneously With single injections evident effects were difficult to detect until a dose producing considerable alteration in muscular activity was given Intravenous injections in rabbits produced effects within 2 to 4 minutes, whereas subcutaneous injections became evidently effective after an interval varying from 10 to 40 minutes the shorter intervals corresponding to the larger doses Subcutaneous injections in cats produced evident effects after periods varying from 17 to 23 minutes with doses varying from 0 5 to 2 5 *mg* per kg body weight The slighter effects were *more* readily observed in cats than in rabbits.

Young animals which had previously been vigorously playful became languid and showed a marked desire to be stretched out on their sides and a distaste for any interference Such animals if stroked or tickled would get up slowly and rather awkwardly and move a few paces away before falling on to their sides again The animals gave the impression of muscular exhaustion With slightly larger doses the onset of paralysis was shown by awkward staggering "drunken" movements before the animal fell on to its side The hind legs appeared to be affected slightly before the front At this stage the cat lay quietly on its side unless disturbed [illegible] such as tickling under the chin resulted in ineffective movements to lift the head and to sit up; the animal had not sufficient power to do this. Passive extension of a leg resulted in an enfeebled attempt at withdrawal, in some cases a fibrillary twitching of the muscles could be seen and felt The respiration continued regular and ample, but became increasingly diaphragmatic in type as the degree of paralysis advanced

Some of the animals salivated freely An increase in the dose gave complete skeletal paralysis with flaccid muscles and loss of corneal reflex but with a continuance of diaphragmatic breathing. The heart beat seen through the chest wall appeared normal A still further increase in the dose abolished the movements of the diaphragm, but the heart continued to beat and with artificial respiration the animal could be kept alive until sufficient of the drug had been eliminated for spontaneous respiration to be effective again. With this complete paralysis there was a loss of the pupil reflex to light. In some animals the complete muscular paralysis led to a blocking of the air-passage either by approximation of the vocal cords or by the epiglottis falling backwards In such cases it was necessary to insert *a tracheal catheter.*

In the rabbit it was also easy to find a dose that would almost completely paralyse the skeletal muscles whilst leaving the breathing adequate Such animals lay quietly on their sides unless disturbed, when marked but ineffective efforts to right themselves resulted. After such an effort a further similar disturbance was ineffective until after an interval. It appeared that the first effort had exhausted the muscle-fibres still influenced by the nerves and no further contraction was possible until these had recovered. Fibrillary contractions of muscles could sometimes be seen and felt. These observations suggested that most of the fibres of each muscle were out of action but that the remaining fibres were still capable of contracting and would do so until exhausted, exhaustion occurred rapidly owing to the few fibres functioning. A greater dose stopped the respiratory movements but the animal could be kept alive with artificial respiration The heart beat appeared unaffected, the gut could be seen moving vigorously, and some animals passed urine or fæces whilst completely under the influence of the drug.

By repeated administration it was possible to keep animals at the desired degree of paralysis for many hours There were no apparent after-effects attributable to the drug, even after long periods of paralysis and repeated daily administration to the same animal. The animals took food as soon as the drug was eliminated



Rabbit Blood-pressure tracing taken under urethane anæsthesia At arrow 1 0 mg curarine injected intravenously. Artificial respiration started almost immediately. Note small immediate fall of pressure which rapidly recovers to its original level Zero pressure 17 5 mm. below beginning of tracing. Time in two seconds

Prof. G. A. Clark kindly made a tracing of the blood pressure of a urethanised rabbit This shows that the intravenous injection of 1 0 mg. of curarine (a very large dose for this route) caused a momentary fall of pressure only (see Figure) During this experiment the right sciatic nerve was exposed in the thigh, cut, and the peripheral end stimulated There was no evident response of the leg muscles, but the direct application of the electrodes to the muscles caused contraction It would appear from this th curarine acts peripherally like crude curara

DOSAGE OF CURARINE IN NORMAL ANIMALS

(*a*) *Single injections*—Increasing quantities we given *intravenously* to a series of rabbits (Table I

TABLE I.—*Effect on Rabbits of Single Intravenous D*

No	Wt kg	Dose mg	Paralysis		Duration min	Remarks
			Skel.	Resp		
292	2 00	0 04	—	—	—	—
293	2 08	0 08	—	—	—	—
292	2 00	0 10	—	—	—	—
294	2 02	0 12	—	—	—	—
293	2 08	0 15	—	—	—	—
295	2 05	0 18	±	—	—	Slight weakness
294	2 02	0 20	+	—	6	—
295	2 05	0 20	+	—	13	—
291	1 90	0 20	+	+	—	Died Failure art resp
290	2 00	0 25	+	—	Dosage contd	—
292	2 00	0 40	—	—	—	Resistant an
286	1 90	0 50	+	+	60	Art resp 45 min

The minimum effective dose was found to be sligh less than 0 1 mg per kg body-weight There appea to be little difference between the dose required complete skeletal paralysis and that which would

TABLE II.—*Effect of Single Subcutaneous Doses in Rabbit*

No	Wt kg	Dose mg	Onset min	Paralysis		Duration min	Remarks
				Skel	Resp		
295	2 05	0 4	—	—	—	—	—
293	2 08	0 5	34	±	—	30	Feebleness.
294	2 02	0 5	40	±	—	?	Some feeb only
293	2 08	0 6	—	—	—	—	—
295	2 05	0 6	18	+	—	34	—
292	2 00	0 8	—	—	—	—	Resistant animal.
292	2 00	0 8	—	—	—	—	
293	2 08	0 8	19	+	—	58	—
293	2 08	0 08	22	+	—	60	Boiled cur
293	2 08	0 8	26	+	—	Dosage contd	—
294	2 02	0 8	30	+	—	43	—
294	2 02	0 8	33	+	—	Dosage contd	—
295	2 05	0 8	37	+	—	22	—
295	2 05	0 8	31	+	—	Dosage contd	—
287	2 20	1 0	22	+	+	89	Art resp 37 min
295	2 05	1 0	18	+	±	83	Art resp 10 min aft breathing complet stopped
292	2 00	1 2	30	+	—	67	Resistant a
293	2 08	1 2	20	+	+	170	Art. resp 108 min
286	1 90	3 0	17	+	+	7½ hrs	Art resp 6½ hrs
287	2 20	3 0	10	+	+	4½ hrs	Art. resp. 4½ hrs
294	2 02	3 0	10	+	+	4½ hrs	Art resp 4 hrs

volve the diaphragm One animal, 292, was found be relatively resistant

The results of single *subcutaneous* doses in rabbits re shown in Table II, where the sign "+" under keletal paralysis means that the animal was unable right itself when placed on its side, the actual egree of paralysis varied, being greater with larger oses Under "Duration" is recorded the length of me during which such paralysis was evident The ose that would give skeletal without respiratory aralysis was of the order of 0 4 mg per kg body-eight in most of the animals Rabbit 292 again roved relatively resistant All these animals ecovered completely A solution of curarine was oiled in a water bath for 60 minutes, and after being ade up to its original volume with water was found have lost none of its potency The effects of single *bcutaneous* doses in cats are shown in Table III

TABLE III —*Effect of Single Subcutaneous Dose in the Cat*

o	Wt. kg	Dose mg	Paralysis		Duration min	Remarks.
			Skel.	Resp		
264	1 9	0 75	±	—	—	Slight paralysis only 15 min
264	1 9	1·00	+	—	53	—
261	2·0	1 00	±	—	—	Weakness only
261	2·0	1 40	+	—	70	—
261	2 0	1 60	+	—	84	—
261	2·0	1 80	+	+	103	Art resp for 88 min
265	2 6	1 40	±	—	Dosage contd.	Slight paralysis only
265	2 6	1 80	±	—	—	Incomplete paralysis 45 min
265	2 6	2·00	+	—	42	—
265	2 6	2 20	+	—	55	—
265	2 6	2 40	+	+	60	Art. resp for 23 min
255	2·0	3·00	+	+	Dosage contd	—

The effective dose per kg of body weight is greater han in rabbits All these animals recovered ompletely

TABLE IV —*Continued Administration*

—		Wt. kg	Total dose mg	Duration of paralysis hours	Respiration
R	291	2·02	3 30	5½	No art. resp
R	293	2·08	3 15	6½	
R.	290	2 00	4·00	8½	Required art. resp on three occasions for 15, 18, and 23 mins
R.	295	2·05	6 25	12	No art resp
R	293	2·08	6 55	12½	
Cat	1265	2 70	7 65	13	
	1253	2·03	8·00	10½	Continuous art resp
	1227	1	23 00	24	

R.= rabbit.

(*b*) *Continued administration* —Both cats and rabbits were kept continuously immobilised to the esired degree for varying periods of time by *subutaneous* doses repeated at intervals of approximately alf an hour After the initial dose it was found hat much smaller doses were required to keep the oncentration at the level necessary to produce aralysis

All the animals in Table IV recovered completely In addition, cats were kept alive but completely immobilised and with continuous artificial respiration for periods of 6½, 7½ 9½, 11¾, 15, and 35 hours before they died Except in one case where no evident cause of death was found and the animal possibly died from overdosage, death was in every case the result of some technical error associated with the artificial respiration Thus two animals died because artificial respiration was discontinued too soon, in two animals the trachea and tracheal catheter were blocked by saliva or mucous secretion whilst in the animal kept going for 35 hours death was apparently the result of regurgitation of milk into the trachea It is clearly possible, however, to keep rabbits or cats under the influence of curarine for long periods without evident damage to their health After the initial paralysing dose, successive doses of the order of 0 25 mg per kg body weight per hour are sufficient to paralyse the skeletal muscles almost completely, whilst slightly larger doses will also abolish natural respiratory movements

EFFECT OF CURARINE ON RABBITS WITH EXPERIMENTAL TETANUS

The animals had all received a lethal dose of tetanus toxin in the right hind leg The first evident sign of disease was a progressive extension and rigidity of this limb In this early stage, before generalised fits had started, it was possible to abolish this local rigidity by the use of curarine, provided a dose sufficient to produce almost complete paralysis of skeletal muscles was administered Subcutaneous doses of the order of 0·4 mg per kg body weight were effective in all of a number of animals Smaller doses, insufficient to produce evident muscular paralysis, had *no apparent effect upon the local rigidity*

In animals in which the local tetanus had been present for some days curarine was found to be only partially capable of abolishing the rigidity, but had a definite effect It is likely that actual changes in the muscle were now responsible for some of the rigidity

When the animals reached the stage of having generalised fits, it was found possible to reduce the violence of these fits but not to lessen their number without producing almost complete paralysis Doses that were too small to produce any evident paralysis had no apparent effect upon the fits, doses sufficient to give marked but not absolute paralysis very considerably diminished the violence and amplitude of the fits, doses giving complete muscular paralysis completely abolished the fits As soon as the paralysing action of the curarine passed off—i.e. in about an hour—the fits returned with their previous vigour

Animals that had been having generalised fits for some time and were then having very bad fits with marked opisthotonus appeared to require markedly smaller doses than normal animals In such animals doses of the order of 0 4 mg per kg body weight were found sometimes to abolish respiratory movements This increased sensitivity was possibly related to the exhaustion of the animals or to the lessened excretion of urine (rabbits will neither eat nor drink after the onset of generalised fits) It was, however, possible in animals having almost continuous fits with opisthotonus to produce a condition of [illegible] flaccidity so that the animal would lie [illegible] up but the right hind leg showed [illegible] rigidity The following [illegible] illustrates the [illegible] by curarine and the [illegible] overdose of the drug by a short period of artificial respiration

On the first day the rabbit, whose weight was 2·5 kg, was given 2 3 c cm tetanus toxin right hind leg. On the third day it was having generalised fits. It lay on its side with head retraction, the front legs were not involved, these still had progression movements

10 hours. Given 0 9 mg curarine and 0 45 mg atropine sub cut 10 17 hours. Fits less in violence when touched; whites of eyes not now showing, neck retraction no longer evident 10 23 hours: Breathing very shallow Placed in mechanical respirator Completely flaccid. 10 25 hours: Mechanical artificial respiration working well; natural respiration not completely abolished. 10 32 hours: Slight corneal reflex. 10 45 hours Natural respiration present but too shallow to stop artificial respiration The inoculated leg can be flexed and extended with little resistance 10.53 hours Breathing by itself Inoculated leg still flaccid, slight movements of limbs 11 18 hours Frequent slight movements and fits 11.20 hours Given 0 25 mg curarine sub cutis 11 35 hours: Slight fits when disturbed. 11 52 hours: Given 0 25 mg curarine. Very slight fits; neck not completely flaccid 12 30 hours Given 0 25 mg curarine and 0 125 mg atropine sub cut Slight fitting movements 13 hours. Few slight fits when stimulated Neck easily bent forward, and head then maintains this position 14 hours: Rigid, marked opisthotonus; marked fit if touched. 14 47 hours Marked opisthotonus, very frequent and violent fits Given 0 8 mg curarine and 0 4 mg atropine sub cut. 15 15 hours: Neck rigidity gone, quiet, occasional slight movement; breathing good 17 hours: Marked fits and opisthotonus, fits on slightest provocation. 17 40 hours. Violent fits, very rigid, extreme opisthotonus Given 0 8 mg curarine sub cutis 17 55 hours: Opisthotonus less; rigidity still present in limbs 18.30 hours: Opisthotonus has disappeared for some time. Quiet 18 32 hours. Killed with chloroform

It is evident then that curarine can be used in controlling the rigidity and fits of tetanus The action of the drug is, however, different from that of crude curara described by Cole (1934) in two human cases. He found that small doses abolished the rigidity in a case of tetanus for periods up to 48 hours In the experiments described above no evident effects on rigidity or spasms were detected unless doses sufficient to produce appreciable paralysis were used, and the effects lasted for only about an hour Possibly curara contains other active substances than curarine, but our experiments with crude curara showed no prolonged paralytic effect.

Suggestions for the More Adequate Treatment of Tetanus

The results of the experiments here described encourage us to hope that some improvement can be effected in the treatment of tetanus It is proposed to outline what is considered essential

At the present time cases of tetanus occurring throughout the country are treated at the nearest convenient general hospital, where facilities for this special purpose are very frequently quite inadequate. Owing to the comparative rarity of the disease it is unusual to find any one medical man with an extensive experience of its treatment. In our view the first essential is to establish some suitably equipped centre or centres each of which would draw cases from a wide area With modern rapid transport this should offer little difficulty A centre of this description would enable the merits of various forms of treatment to be adequately investigated in a relatively short space of time and enable a staff to be trained in the procedures necessary. How this centralisation is to be carried out we will not suggest, but its desirability is quite obvious Until the time comes when such centres are available it is possible that treatment on the following lines might, if employed by individuals in different hospitals, lead to the saving of some lives. The deductions drawn from their observations, however, would have only a limited value

Quiet —The usual precautions to exclude external stimuli should be taken

Antitoxin —There is still a wide divergence of opinion as to the relative merits of the various routes for the introduction of antitoxin Some claim good results from its introduction into the subarachnoid space, others consider the disturbance involved in the procedure detrimental Our own view is that large doses given early and intravenously are likely to be the most effective This point could be investigated if a central station were established, but it seems unlikely to be resolved under the present conditions If the wound has been completely excised, little benefit is likely to accrue from repeated doses

Excision of wound —The advisability of excising healed wounds is not universally acknowledged It is probable that the tetanus bacilli in such wounds are no longer producing toxin, but this requires further investigation and meanwhile it is safer to remove them.

Control of fits and rigidity —Curarine obviously offers the prospect of being able to control fits and rigidity to a considerable extent without the vegetative functions It is a drug which is rapidly eliminated. This has the disadvantage that injections must be repeated at about half hourly intervals but the advantage that the treatment may be quickly stopped if necessary Its administration necessitates constant watchfulness and attention and thus needs a team trained to use it

There are two difficulties likely to arise during its administration (1) Asphyxia from saliva back into the throat this can be controlled necessary, by the administration of atropine and attention to the position of the head (2) A slight overdose is sufficient to stop the diaphragm. It will noted that, to be fully effective, curarine must given in doses only a little short of that paral the diaphragm, but this need cause little anxiety an apparatus for giving artificial respiration available In our animal experiments a D apparatus has been used, but that invented by Br and described by Kerridge (1934) would appear to admirable for the purpose Artificial would in any case only be needed for 20 minutes so at a time While giving artificial respiration must be taken to see that the airway is not obstructed mechanically owing to the flaccidity of the muscles

There are no indications that injections of cause any undesirable local or general reactions after repeated doses If curarine proves inadequate for the control of fits, gas-and-oxygen should administered, and it would be advisable to do whenever any extensive manipulations of the pat are necessary.

Inasmuch as curarine probably has no effect consciousness it would be helpful to diminish activity of the sensory mechanism, thus incre the stimulus necessary to arouse a fit as well promoting sleep. Any drug, such as morphia, depresses the respiratory centre is definitely con indicated, but trial should be made to asce which of the many drugs now available would most effective

It is very necessary to prevent exhaustion of patient by lack of sleep and excessive mu activity. The treatment suggested above probably help materially in this, but it is still nece

lminister as much fluid as possible As degluti
would be interfered with by curarine, reliance
; be placed on rectal or intravenous glucose,
gh it has been possible to adjust the dose so that
ne rabbits were again able to swallow water It
d also be possible to give food by stomach tube
ed under gas-and-oxygen anæsthesia

yperpyrexia—As has already been mentioned this
most important complication for which little if
hing, is done at present If the fits be controlled
curarine together with gas and oxygen when
ssary, there should be no difficulty in treating the
temperature by methods already employed in
r diseases

SUMMARY

) The effects and doses of curarine in cats and
its are described (2) Suggestions for the more
quate treatment of tetanus are made

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HE DIAGNOSIS AND TREATMENT OF DOUBTFUL MAMMARY TUMOURS

By M C Tod, M B, F R C S Edin

AND

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RISING from our work on the pathological
mination of tumours removed from the breast,
have paid special attention to the analysis of
umber of operations performed on patients with
ast tumours whose nature could not be determined
advance of operation Where the condition is
nitely malignant, treatment is urgent and is more
less determined by the character and extent of
tumour, the experience of the surgeon and the
lities available At the other end of the scale are
so cases—probably a large number though
recorded—with temporary and possibly painful
mmary enlargement usually associated with
nstruation or the menopause These rarely call for
gical interference and, in most cases are not
erred to a surgeon Between these two groups—
definitely malignant growths and the temporary
erplasias—lie, from the diagnostic point of view
benign tumours and the group generally referred
as doubtful borderline or suspicious tumours,
which there is insufficient evidence from the
tory or the clinical findings to justify immediate
atment for carcinoma Procedure in these clinically
ubtful cases ranges from local excision of the
picious lump under local anæsthesia in the surgical
patient department to radical operation, in the
ter case the patient is occasionally even denied
benefit of the doubt, as operation begins with
illary dissection The French school and to a less
ent the American seem over anxious to avoid
at they call "unnecessary mutilation" and
quently advocate local resection of a suspected
s on the basis that simple amputation is too
ch for a benign growth and too little for a malignant
It is difficult to gather what is the procedure
his country, or to what extent biopsy or frozen
ion is used as an aid to diagnosis The clinical
diagnostic error recorded in the literature in doubtful tumours is considerable and it is likely that many doubtful groups cannot be recognised before operation The surgeon who has to make the decision as to the type of operation in doubtful cases is faced with a grave responsibility If he decide to do a radical operation for a condition which turns out to be benign or a local excision of one which proves biologically to be definitely malignant, he makes a grave mistake in treatment The divergence of view in the literature is illustrated by such recent papers as Wainwright's[1] and Bloch and Wechsler's[2], Bloodgood speaking of cystic disease, an important group of the doubtful lesions, thinks that, with rare exceptions, simple mastectomy is illogical[3] One of the few papers we have noted which advocates simple amputation (for duct papilloma) is that by Lepper, Baker, and Hartog in this journal[4] As an extreme example of the lengths to which exploratory interference can be carried, one may quote from Prof Herzler's recently published monograph on the surgical pathology of the breast This author, in the diagnosis of what he terms preclinical carcinoma, advocates "making slices a quarter of an inch thick through any suspicious area not forgetting the part that extends towards the axilla When extensive exploration fails to disclose a malignant area the tissue so mutilated must be resected If the nipple is preserved a fat flap is transplanted and the breast sufficiently restored so that no notable deformity results When in the exploration nothing can be found in the breast, the axilla should be explored" In a number of the two stage operation cases we are studying, the first operation was a local tumour excision, though the tissue radically removed soon after showed invasion of the axillary lymph nodes.

In view of these differences in precept as well as in practice, we have tried from our pathological material to find a guide to procedure that might not be too drastic if the lesion turn out to be benign and not too dangerous if it prove malignant In order to make our conclusions clear, it is necessary to refer to diagnosis as well as to treatment

Diagnosis

These benign and doubtful mammary lesions which give rise to considerable difficulty in diagnosis, may conveniently be divided into the following groups (1) benign tumours, (2) chronic infections, (3) cystic changes, (4) early carcinoma, (5) acute carcinoma, simulating infection, (6) pregnancy and lactation tumours, and (7) fat necrosis

BENIGN TUMOURS

The important forms are the fibro epithelial tumours which include two types (*a*) the fibro adenomata and (*b*) the papillomata though intermediate forms such as those which Ewing describes as papillary intracystic fibroadenomata may occur when cystic changes are also present

Fibroadenomata—In young subjects the circumscribed fibroadenoma presents little difficulty, the diffuse form fibroadenomatosis, may be bilateral and is usually a temporary overgrowth which responds to conservative treatment In older patients the fibroadenomata give greater difficulty in diagnosis for although the single tumour in an otherwise unaffected breast is clinically and histologically similar to that occurring at the earlier age these tumours may be multiple, they may be associated with cyst formation and they may coexist with undetected malignancy in the surrounding tissue. The accepted signs of a fibroadenoma, mobility and encapsulation, do not necessarily supply a definite diagnosis in these older patients, for Luff[5] found that 51 2 per cent of a series of 1400 malignant growths showed no fixation, and our material provides a number of instances in which a movable, apparently or actually encapsulated carcinoma has been excised on the assumption of its benign character (Fig. 1), or in which the radical operation has been done for a large fibroadenoma (Fig. 2). Without entering on a consideration of the meaning of the term "precancerous," we may state that we are unable to agree with the view that fibroadenomata exhibit any greater tendency to become cancerous than any other portion of the glandular tissue of the breast These tumours apparently always originate in *adenosis*—that is, in an increase of glandular tissue of normal or exaggerated physiological type, with a coincident fibroblastic activity, and although all varieties of tumour structure occur, ranging from adenoma to almost pure fibroma, according to the predominance of one or other tissue element, we have encountered no instance of malignant development in the *epithelial* content of such growths Many of Bloodgood's borderline tumours are adenomatous growths,[6] and though the abundance and complexity of the glandular tissue in these cases led, in many instances, to the diagnosis of a precancerous lesion or even adenocarcinoma, his experience that none of these cases, followed for many years, had later trouble, even after incomplete operation, supports our contention that they are essentially benign. On the very rare occasions when a fibroadenoma becomes malignant, it forms a sarcoma, but the few cases in our series suggest that when this happens, the growth soon gives definite clinical evidence of malignant development. The term precancerous would need justification if applied to mammary lesions It has often been pointed out that we can say of no non-malignant mammary condition that it will certainly become carcinoma; in view of the high incidence of malignant development in the breast, it is, however, equally difficult to be certain that it will not become carcinoma The examination of 400 benign and over 1000 malignant breast tumours, many at an early stage of development and cut in whole breast sections, has nevertheless provided no evidence that carcinoma originates in an increase of glandular structures which we call adenosis, and which we do not regard as "precancerous" This question has been discussed in an earlier study by one of us,[1] where the position was maintained that carcinoma in the breast is the end-stage of a process which develops not as an adenosis (Fig. 3) but as an epitheliosis (Fig. 4), or epithelial cell proliferation w glandular structures, which results in the produc of intraductal malignant cells, with later inva and dissemination. This appears to us a fun point in the histological diagnosis of doubtful m mary tumours. When proliferation results in aden or as is more usual, in fibroadenosis or fi there is no likelihood of carcinoma, but epitheliosis, of papillary or "solid" type, is in evidence, the eventual outcome cannot be dicted, if the tissue is not removed. In older jects the two types of epithelial cell activity in the same tissue without giving diagnostic sign

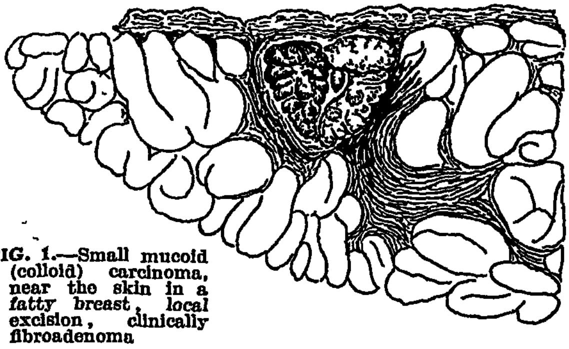


FIG. 1.—Small mucoid (colloid) carcinoma, near the skin in a fatty breast, local excision, clinically fibroadenoma

Papillomata —The cell proliferation in tumours is more definitely an epitheliosis and outcome is uncertain, as it is in other situat The formation of atrophic cysts of Bloo "blue-dome" type, with the wall entirely or lined only by scanty degenerating eosinophil the remains of an epithelial overgrowth which frequently papillary in structure, indicates proliferation of this character has taken place has retrogressed, but apart from this type, mata in general should be regarded with suspic and in many cases are probably precancerou the ordinary acceptance of that term They occur singly, usually in the larger ducts, but, Cheatle and Cutler have demonstrated,[8] they often multiple, and may be so small as to be scopically undetectable The larger forms produce discharge from the nipple, but this is in itself a diagnostic sign, nor, if present, does necessarily help to localise them. Examination many cellular ("encephaloid") carcinomata in la and small sections, especially at an early before dissemination, suggests that a large of these mammary tumours began as pap formations.

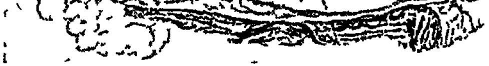


FIG. 2 —Fibroadenoma—no suggestion of malignan

CHRONIC INFECTIONS —CYSTIC CHANGES

When the chronic condition is the late sta an earlier acute lactation or pregnancy ma which resolved without incision, the history is he but a hard, more or less circumscribed tumour fixation in breast tissue and possibly nipple tion may give a clinical picture closely resem carcinoma (Fig 5), and may also be found in parous patients The axillary lymph node usually palpable, though softer than if invade malignant growth Chronic infection of the may also be of tuberculous or syphilitic origin both conditions are very rare.

Breasts with *cystic changes* cause much uncert in diagnosis These cases come under obsern most frequently at an age-period when the bility of malignant development must be bor and, and should they coexist, a causal connexion s often and unjustifiably assumed between the cysts nd the carcinoma The atrophic cyst of the blue-dome type may be single and of considerable size, nd not be noticed for a long time, but its presence oes not prevent independent carcinoma appearing n another part of the breast It is this possibility which lies behind the uneasiness with which cystic isease is regarded In some cases the single simple yst can be diagnosed by palpation, especially in thin lderly subjects, but the irregularly thickened, “lumpy” breast, with smaller multiple atrophic ysts, may also contain an undetected early cancerous growth

EARLY CARCINOMA

There are no diagnostic signs indicating an early malignant change, which may equally well supervene on a previously benign tumour of longer or shorter duration as in an apparently normal breast The wide variation in the physiological structure of mammary tissue at “the cancer age” has also to be taken into account As MacCarty has stated,[9] early carcinomata are discovered, not because the surgeon actually detected them, but because *he had* in mind the probability of their presence and removed he mamma on suspicion The signs associated with malignant growth—nipple retraction, fixation, lack of definition of the tumour area—are, *in general*, evidence of extensive malignant spread, but on the other hand, are not necessarily evidence of malignancy at all There are various types of early carcinoma (*a*) early cancerous development *in* a benign papilloma, (*b*) early duct cancer, called by Ewing diffuse duct cancer, (*c*) a very small carcinoma in a breast otherwise apparently normal on palpation (Fig. 1), (*d*) early carcinoma associated with localised or diffuse cystic changes, and e) malignant tumours of the skin overlying the breast with secondary invasion of the mammary tissue We give two examples illustrative of difficulties which arise

Mrs A B , aged 49 , enlargement of both breasts, more evident on one side, with intermittent pain and tenderness Simple mastectomy on the more suspicious breast Microscopically multiple atrophic cyst formation with ome adenosis , in one area a small carcinoma *originating* n epitheliosis in a group of small ducts with early invasion f the surrounding stroma The patient is well nine years fter treatment

Mrs C D , aged 48 , lump in the breast present for over a year with steady growth, recent ulceration Clinically an indurated area in the breast, underlying and firmly attached to the ulcer Radical operation several enlarged nodes in axilla Microscopically a basal cell carcinoma, without node invasion Patient *alive and* well four years later This was a skin tumour with secondary involvement of the breast

ACUTE CARCINOMA SIMULATING INFECTION

This is a rare form of malignant growth It is usually diffuse—a carcinomatosis—and from the few cases in our experience is exceptionally difficult to diagnose before treatment A carefully considered history will, in some cases reduce the likelihood of error, if the possibility of malignancy is borne *in* mind An infective lesion of the breast is rare apart from pregnancy and lactation and the local heat of the tumour is apparently due to the marked injection of the malignant tissue and not associated with a rise of body temperature The following is an instructive case

Mrs L I aged 34 diffuse enlargement of right breast for five months ; treated *for* three months as inflammatory condition, then incised by family doctor, no pus ; surgeon called in consultation Biopsy showed malignancy *On admission* breast *enlarged* hard, very prominent, hot and absolutely fixed , a few palpable axillary nodes Treated by surface irradiation, which made radical *operation possible* Whole breast sections showed malignant development in the whole of the mammary *area from skin to deep muscle, both of which were invaded* (Fig 6), one axillary node involved

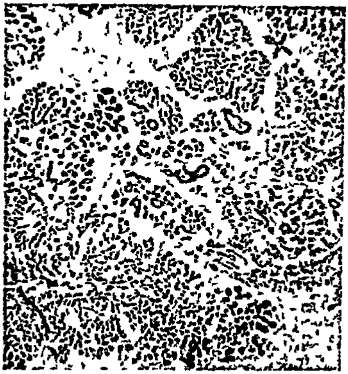


FIG 3.—Adenosis (× 40)

PREGNANCY AND LACTATION TUMOURS —FAT NECROSIS

Pregnancy and lactation *tumours are also rare* They are usually missed in their early stages and according to most authorities, are invariably fatal with surgical treatment Some of the cases we have examined in large sections suggest that a small lesion, possibly a benign tumour, was present prior to pregnancy, as the malignant area showed no *functional* hyperplasia , but, *in all cases* mammary enlargement associated with physiological hyperplasia and function is likely to conceal the early stages of cancerous development We cite one of a *number of cases in our collection.*

Mrs G H , aged 37 stationary *tumour in breast for* six years Immediately after birth of child, very rapid growth , seen by surgeon six weeks after confinement, radical operation, death within six months Whole breast sections showed a very malignant growth, invading and destroying the lactating tissue, with lymphatic and blood vessel invasion and axillary involvement At the periphery was a small malignant papilloma derived apparently *from the stationary tumour* and possibly the source of the invasive growth

Fat necrosis is another rare mammary lesion of which we have little experience Clinical diagnosis of this lesion demands histological examination to *rule out the more serious condition*

Treatment

Before deciding on the extent of treatment necessary in these benign and doubtful mammary tumours the surgeon will *consider* various points in the history—age, duration of the growth previous pregnancies and lactation presence or absence of pain discharge from the nipple, infection—and in the examination—mobility or fixation, fluctuation size consistency, and definition of the lump, nipple retraction, and the condition of the axillary lymph nodes. None of these signs or symptoms is in itself diagnostic, but a careful evaluation of each may provide a signpost which points to a benign or malignant growth Age is an important factor, for while we agree with Cheatle (loc. cit) that, with the exception of women under 25 years, the age of the patient should carry little weight in the differential diagnosis of mammary carcinoma, we consider that no tumour of the breast in a woman over 35 years can be regarded as certainly benign In some clinics such aids to diagnosis as biopsy, cellular smears, or frozen sections are used, and others lay stress on transillumination or X ray examination Our material provides no data on these methods, except local removal of tumours, and one or two instances of deliberate biopsy.

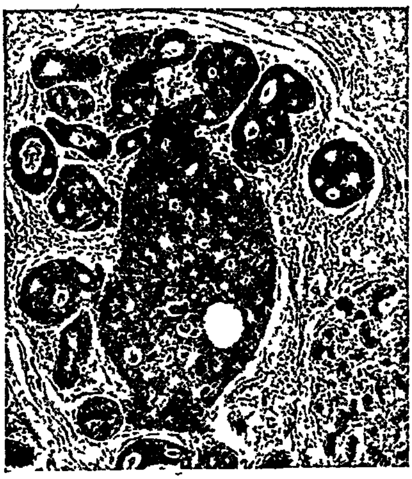


FIG. 4 —Epitheliosis (× 40.)

The surgeon who decides to operate on a doubtful tumour has several roads open to him—namely, local excision of the tumour, simple mastectomy, and radical operation.

LOCAL EXCISION

This is adequate treatment for fibroadenoma in a young patient and possibly in certain chronic infections. Partial resection is also advocated by some surgeons for duct papilloma in the main ducts, but there is too great likelihood that these are multiple, and they are not easily located. The danger of inadequate tissue removal in older patients is well brought out in a considerable number of doubtful cases in our series, and we prefer not to resect the tumour in order to preserve mammary tissue which in most of these patients is atrophic and incapable of further function Mastectomy should be done in these older patients. If the resected tissue prove to be malignant on histological examination, further treatment is urgent. The following cases are instructive.

Miss I J, aged 33, swelling in breast for two years, increasing in size; some pain and occasional yellow discharge from nipple last few months Clinically, hard, irregular swelling medial to nipple, no fixation, nothing in axilla. Local excision of nodule showed complex papillary growth in ducts near nipple. Sections showed proliferation in layers of an atypical cell, very suggestive of malignancy with invasion. Radical operation eight days after local excision Malignant nature of growth proved by recurrence in supraclavicular nodes same side 13 months later; area treated by beam (bomb) therapy, and nodes became softer and smaller, but were still palpable four months later.

In this case it is possible that dissemination to the supraclavicular nodes had occurred before local excision, but if not, it is likely that spread was hastened by incision and manipulation at remov of the nodule and, in that case, might have bee avoided by primary simple mastectomy.

Mrs. K L, aged 50. Lump, clinically fibroadenom removed from breast, no microscopical examinatio Two months later two nodules in scar, two month later nodules showed signs of ulcerating and node palpable in axilla. Radical operation attempted, b numerous hard nodes in axilla and along internal mam mary artery out of reach Death six months after this— i e, ten months after excision of primary tumour.

SIMPLE MASTECTOMY

This procedure is advisable in all cases wher doubt exists in the mind of the surgeon that mal nancy is present, with the two exceptions alread mentioned, acute carcinoma and pregnancy lactation tumours, where surgical interference be limited to biopsy for diagnosis by electric cauter With these exceptions, removal of the mamma and examination of the gross pathology of the tissue wi solve the problem of diagnosis in a large proporti of these doubtful cases Should the condition prov malignant, the radical operation can at once be p ceeded with, if benign, nothing further is necessar If the question cannot be decided by the appearan of the tissue, a choice must be made between th completion of the radical operation, a two-stag operation if microscopical examination confirm th suspicion of malignancy, or irradiation of mammary area without further surgery. It has advocated that should carcinoma be present, th radical operation forms a better block dissection the axilla be cleared first, but this procedure r out diagnosis by examination of the cut surface the amputated mamma. Even in cases of obvio malignancy, when the method is permissible, seems to have no special advantage. Contrary most opinion in the literature, the cases of two-s operation in our series indicate no danger in the method if radical removal be not delayed. have been able to follow cases treated by two-st operation for three and more years. Lane Clayp figures show a five year survival-rate of 81 8 per in cases treated by two-stage operation comp with 74·3 per cent for radical operation.[10] result is to be expected, since cases so treated clinically so early that if time be not given for semination they remain at grade I The two procedure has, however, obvious practical difficul and our experience suggests that the necessity it will be restricted to a very small number of c if the morbid anatomy of the mastectomy mate be carefully examined The value of mastectomy shown in the following cases.

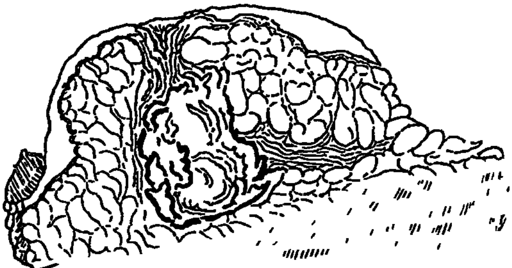
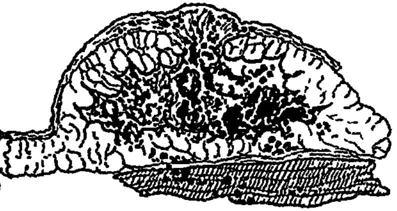


FIG. 5.—Chronic abscess, clinically malignant, radical operat

Miss M. N., aged 33, lump in breast three mo duration; examination showed both breasts unu large and full with prominent nipples; tumour in reast upper outer quadrant and axillary tail, irregular and diffuse Age of patient and bilateral enlargement iggested benign condition Mastectomy of breast with imour, which on section obviously malignant, radical beration completed at once Microscopically duct ncer with early tissue invasion, axillary nodes not volved. Alive with no signs of disease two years and ree months later

Mrs O P., aged 47, para 2, both nursed three months, previous trouble Lump in breast five or six months, rd nodule size of marble, upper inner quadrant, slight tachment to nipple, which very slightly indrawn, no


G 6.—Acute carcinoma simulating infection (see history in text, Miss L J, aged 39)

lpable axillary nodes Mastectomy showed large cyst der tension, microscopically atrophic in character th thick fibrous wall, some adenosis in surrounding sue No sign of further trouble one year and ten nths later

Mastectomy with axillary dissection is possible, it not relevant to our argument

RADICAL OPERATION

Present statistics indicate that the highest survivaltes in mammary carcinoma are obtained in cases ere the radical operation is performed for early mours If, therefore, examination of the gross thology after mastectomy for a doubtful tumour ow that the condition is malignant, the radical eration should at once be proceeded with This the accepted treatment for early carcinoma at st clinics, and we need not cite examples The lowing cases illustrate the radical removal of the east for a non malignant growth, a not infrequent ocedure in our series

Mrs Q R, aged 55, lump in right breast for three eks with slight discharge from nipple, clinically two ed areas in this breast, no fixation, one hard small egular ill-defined lump in left breast with slight fixation skin but not to deep tissues, a palpable node in left illa. Bilateral radical operation with two months terval Neither breast microscopically malignant, tient shows no sign of disease 2½ years later but there very marked limitation of movement at both shoulders

Miss S T, aged 40, painful thickenings in breast for ree weeks, two lumps palpated one suspicious hard l attached to skin Radical operation; several enlarged des in axilla Large and small sections showed no lignancy in breast or axillary tissue but cystic disease l some fibroadenosis Patient alive with no sign of ease three years later

SURGERY AND IRRADIATION

We have discussed in this paper the surgical treatnt of doubtful tumours of the breast because the

diagnosis ought to be made l with immediate examination o of the tissue In this connex to refer to the scruples which felt in doing a mutilating o removal of a breast when loca sufficed That the psycholo removal might be injurious e but in our view this possibility weigh too heavily, and it is women surgeons with whom w matter lay little stress on this impossible to predict in advan is malignant or benign, we de consideration should prevent

Once malignancy is establis tion or by the histological exa it must be decided whether planned irradiation offers the b We believe that with increas ment by irradiation more cas this method, statistical com possible, and a knowledge of choice

Summary and Co

1 Benign and doubtful mam as (a) fibro-epithelial tumours, (c) cystic changes, (d) early carcinoma simulating infectio lactation tumours, and (f) fat in relation to some diagnostic d

2 The choice of treatment of is described under (a) local ex area, (b) simple mastectomy, an

3 Analysis of a large series with known later history, su stage operation is not dangero In women over 35 years sum immediate examination of th the breast and submission of logical opinion is the method o Should the tumour appear ma eye, the radical operation sho once

The facts presented seem to clusion that in women of cance tumour of the breast, diagnost be performed as the best initi except in cases of acute ("infla and pregnancy and lactation tu

This work has been done in the College of Physicians and in the (tumour service) of the Royal The material on which it is base cases treated in the Royal Infir for Women and Children, Edin other hospitals and private clinic ledge our indebtedness to the l the Royal College of Physicians, the pathology department of the the Carnegie Trust for the Unive

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THE TREATMENT OF POST-OPERATIVE RETENTION OF URINE

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THE treatment of post-operative retention of urine is often delayed and indefinite and the condition worries the patient. There are many occasions on which the worst part of an operation, in the opinion of the patient, is the period after the return of consciousness when the discomfort of nausea and vomiting is aggravated by inability to micturate.

Text-books of surgery are unanimous in their opinion that spontaneous micturition must be established as soon as possible after operation, but the treatments they advise for those patients who have difficulty are not always immediately successful. There is no doubt that the most simple and immediate relief is given by passing a catheter, but this is seldom done because of the fear that the patient may develop cystitis and subsequent infection of the kidneys, and because it is taught that once a catheter has been passed it may be necessary to repeat the procedure on several occasions During the past year an effort has been made in the wards of the Surgical Unit of St. Thomas's Hospital to determine the possible advantages of using a catheter whenever it may be necessary, and to estimate the dangers to which the patient is exposed as a result of this practice Incidentally certain other features were investigated and some will be briefly considered.

In a control series of 414 patients operated upon for general surgical conditions, the incidence of post-operative retention was 9 per cent in males and 7 per cent. in females The patients with retention were treated by giving hexamine grs 15 and repeating the mixture in 20 minutes if the first dose was not successful.

It is well known that operations upon the perineum or pelvic organs are more likely to be associated with post-operative retention than any others because relaxation of the perineal muscles is inseparably connected with the voluntary development of micturition. It has been shown that the process starts with rhythmical contractions of the bladder musculature, and this is followed by a relaxation of the internal and external sphincters[1] Passive increase in the intravesical pressure does not influence the sphincters, and therefore straining by the abdominal muscles is not successful as long as the sphincter supplied by the pudendal nerve is in spasm The condition is uncommon after operations upon the limbs and parts remote from the abdomen

The anæsthetic is connected in some way with its development, for post-operative retention is much less frequent after local anæsthesia or gas-and-oxygen than in any other type and is greatest in patients who have had a deep general anæsthetic The incidence after spinal anæsthetics as given by Butureanu and Burghele[2] is approximately 10 per cent in a series of 575 operations, one-third of which were in the neighbourhood of the anus It seemed therefore that in some cases the explanation might be that the bladder became distended during the hours of unconsciousness and the normal impulses which initiate micturition were not registered in the proper way. Emptying the bladder immediately before the anæsthetic was given made no difference to the incidence of post-operative retention, and passing a catheter at the end of the operation made the likelihood of subsequent difficulty in micturition th times as great as in the control series

A catheter was passed at the end of the operation in 78 patients and the average amount of urine withdrawn was approximately 2 oz. It is interesting to note that the bladder is atonic during deep anæsthesia, so that on passing a catheter a few ounces trickle out and the remainder can only be expelled by pressure upon the abdominal wall The excretion of urine after a big operation is not as great as normal and it is unusual, in a patient who has emptied the bladder immediately before operation, to find more than 10 oz at the end of twelve hours These facts make it clear that it is unwise and unnecessary to pass a catheter as a prophylactic measure during the first twelve hours after operation

It was decided in another group to pass a [illegible] as a routine at the end of twelve hours in every who had not micturated normally and to repeat the process at intervals of eight hours as often as it might be necessary. A total of 52 patients were treated with the following results: 38 were catheterised once and passed their urine normally within the next eight hours, and 14 had a catheter passed on two or more occasions before spontaneous micturition was established. It will be seen that the results are unsatisfactory, for not only was the treatment unsuccessful at the first attempt in a [illegible] proportion, but several patients were catheterised who would doubtless have passed their urine naturally if they had been left alone

In all cases careful bacteriological investigations of every specimen of urine withdrawn by the [illegible] were done by Dr D. C L. Derry, and in only a woman who was catheterised six times—were organisms found. It appears that the risk of infection is very small provided that there is no patho lesion of the urinary tract before operation provided a catheter is not passed on several occasions in the one patient. The following figures by Curtis[3] support this view:

Catheters passed	Not at all	Once.	Twice	Many times.
Cases	1051	187	88	263
Residual urine ..	8*	12	24	173
Urinary infection ..	0	0	0	9

* These patients normally have some degree of residual urine

American authorities have stressed the fact that retention is particularly liable to occur in patients who are apparently normal before operation but who have some degree of residual urine, and Curtis maintains that residual urine can be demonstrated in 64 per cent of catheterised patients after the [illegible] of spontaneous micturition These facts have been quoted as contra-indications to the use of a catheter, but it has been clearly shown that infection is [illegible] likely to occur after a catheter has been passed [illegible] times on the same patient, and a small degree residual urine is, in itself, no bar to normal micturition

In the absence of treatment the majority of patients pass their urine naturally between the tenth and fifteenth hour after operation, and it is not [illegible] until after this that the question of difficulty arises. A group of patients were tested in whom a catheter was passed as soon as a complaint was made, and the 31 cases treated in this way two-thirds [illegible] no further treatment and the remainder were successfully relieved by the administration of hexamine.

In conclusion, it seems that post-operative retention cannot be finally and certainly relieved by the of a catheter, but if the instrument is passed before the bladder is unduly distended, when the patient first complains of difficulty, two thirds of the cases will be relieved without discomfort or danger, and the remainder—a small proportion of the whole—can still be controlled by the usual methods. The passage of a catheter is ineffective as a prophylactic measure, and it should not be used in patients who have a previous urinary infection.

This work was carried out at the advice of Mr. Max Page, who has kindly criticised the results.

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Clinical and Laboratory Notes

CEREBRO-SPINAL FEVER

RECOVERY FOLLOWING INTENSIVE SEROTHERAPY

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ON June 7th, 1933, a boy, aged 17, became suddenly ill with severe occipito frontal headache, pain in the back of the neck and eyes, and diplopia. He was admitted on June 12th to the Coventry and Warwickshire Hospital, where Dr. A. F. Wright, the pathologist, reported the presence of meningococci on rect smear of the cerebro spinal fluid, which however so failed to culture. The patient came under my care the same day on being transferred to the City Hospital for Infectious Diseases, Coventry.

On admission he was somnolent, dazed, and showed tarded cerebration. Roused with difficulty to extent replying imperfectly to simple questions. No knowledge the day or date. Complaint of headache, double sion, and pain and stiffness in neck. Throat congested d tongue thickly coated with two longitudinal bands of llowish-white fur. Pupils equal, moderately dilated, and acting sluggishly to light. A fair degree of head retrac on present with marked Kernig's and Brudzinski's gns. Knee jerks and superficial abdominal reflexes sent. Right cremasteric reflex sluggish, left normal. exor plantar responses. No ankle-clonus. Dulled nsation to pin prick in left arm. Heart sounds slow d muffled.

June 13th. Drowsy state unaltered. Muttering to mself throughout the greater part of the night. The thdrawal of cerebro-spinal fluid (c.s.f.) was attended a temporary augmentation of headache, and there was mplaint of cramps in the legs during the intrathecal ministration of serum. Such symptoms may be countered fairly frequently and demand a slowing down the operative procedure. The condition of the pulse lled for the administration of adrenaline.

June 14th. Mentality much clearer and patient now le to converse fairly well. Slight increase of headache, chal and spinal pain, attended with a more turbid ndition of the c.s.f. Lumbar puncture resulted in the w evacuation of 10 c.cm. of fluid. Ten c.cm. of physiogical saline were then introduced, this being followed by apid outflow of 38 c.cm. of fluid from which a "spider's b clot" or coagulum—indicative of high protein ntent of the c.s.f.—quickly separated out. Such a web" formation has been stated by Gordon[1] to have en found by him with equal frequency in conditions of ronic meningitis of tuberculous or meningococcal gin.

June 15th. Less headache and a diminution of the ins in the back and lower limbs.

June 17th: Excoriated nostrils and herpes on lips. he latter sign, which is fairly common, has made its appearance in this case unusually late. According to Foster and Gaskell[2] herpes is generally found about the fourth day of the disease.) Tongue much cleaner, moist, and red, with narrow strips of fur. Kernig's sign and nuchal rigidity diminishing. Mild headache. Pupils small, equal, and react normally to light. Knee jerks still absent, as also the superficial abdominal reflexes—there being a fair degree of spasticity of the trunk muscles. Normal sensation to pin prick.

June 21st. Serum rash commencing on arms. Pink discrete papules of urticarial type. The Lister Institute reported the c.s.f. to be sterile with a predominance of lymphocytes present.

June 22nd. Kernig about 140°. Suspicion of a right superficial abdominal reflex found. There is ability to rotate the head, but no flexion is possible. The patient complains of slight headache each morning, doubtless attributable mainly to the increasing c.s.f. since the previous puncture. Throat congested and post-nasal discharge present. Tongue moderately coated with mottled white fur. Mentality clear, but abnormally long periods spent in sleep.

June 24th. Sudden severe headache caused by continuous initial flow of c.s.f. which had to be checked. Mild collapse symptoms supervened with dilatation of pupils and rapid shallow breathing. The accompanying chart demonstrates the remarkable lack of correspondence between the pulse and temperature. Horder[3] has drawn attention to this peculiarity.

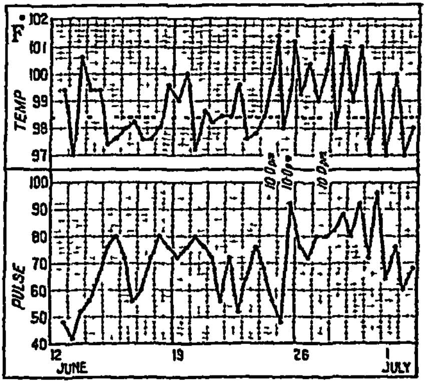

Chart showing relation of temperature and pulse-rate during illness

June 25th: Punctate erythematous type of rash on arms and to a less extent on chest. Absence of any manifestations of sore throat. Intramuscular injection given of antiscarlatinal serum. Brandy and adrenaline required to counteract collapse after intrathecal and intravenous injections.

June 26th. Scarlatiniform type of eruption more copious.

June 27th: 76 c.cm. of c.s.f. flowed out in the space of six minutes. Boy becoming very thin and colour not as good as previously. Somewhat cyanosed at times. Rash almost disappeared but a blotchy bruise-like appearance now seen on elbows. The presence of this so-called "elbow sign" has been emphasised by Fairley and Stewart[4] who regarded it as a characteristic symptom in cerebro-spinal fever.

June 29th. Complaint of pain in thoracic and abdominal muscles, the latter being rigidly contracted.

July 4th. General condition improving and temperature normal, but boy emaciated. Steady progress maintained until July 15th, when patient began to sit up in bed. Kernig's sign now little marked (about 155°). Knee jerks and superficial abdominal reflexes still absent.

July 21st: up in blankets July 28th · up in clothes; superficial abdominal reflexes now normal. August 3rd: no knee-jerks; other reflexes normal. August 4th: discharged home, walking stiffly, but otherwise in good health This youth wrote nearly nine months later, stating that "apart from slight attacks of headaches now and again, he had never felt better in his life before."

This appears to have been a moderately severe case of cerebro-spinal fever with a tendency towards chronicity, and the recrudescence which commenced near the close of the third week of illness seemed at the time to portend a fatal issue. The remarkable feature is the extraordinary large quantity (1182 c cm.) of cerebro-spinal fluid withdrawn by 22 lumbar punctures, and the considerable amount (642 c cm.) of antimeningococcal serum used in treatment. (cf., Todesco's case.)[5] (See Table.) The amount of cerebro-spinal fluid normally present in the sub-arachnoid space, according to Worster-Drought and Kennedy,[6] varies between 60 and 80 c cm.

Amounts of Cerebro-spinal Fluid withdrawn and Amount of Serum Injected

Date in 1933.	Lumbar puncture; c cm c s f withdrawn	Condition of C.S.F	C cm anti-meningococcal serum injected.		
			Intra-thecally.	Intra-venously.	Intra-muscularly
June 12th	40	Opalescent.	25	12	.
13th	34	,,	15	10	10
14th	38	Slightly turbid, Froin syndrome *	15	10	10
15th	20	Opalescent, lemon tint, under pressure	15	10	10
16th	35	Clear, under pressure.	15	10	10
17th	45	,,	15	10	10
18th	58	Clear, faintly yellow	15	.	
19th	60	Clear, under pressure.	.	15	10
20th	56	Opalescent.	15	10	10
21st	52	Clear.	15	..	
22nd	56	Slightly opalescent	15	10	10
23rd	60	Opalescent	15		10
24th	68	Slightly opalescent, under marked pressure	15	..	.
25th	65	—	10	.	10
26th	66	First few c cm slightly blood-stained and under high pressure	15	10	10
27th	76	Slightly yellow.	15	10	10
28th	32	Very faint yellow tint	15	10	.
29th	56	Clear.	15	10	10
30th	58	Faint yellow tint	15	10	10
July 1st	63	—	15	10	10
2nd	66	—	15	10	10
3rd	78	—	.	..	10

* "Web" clot soon settled out

I have to thank Dr. A Massey for permission to publish this case

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4. Fairley, N A., and Stewart, C A: Cerebro-spinal Fever. Comm of Austral. Serv Pub, No 9, Melbourne, 1916
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A CASE OF ABORTION

By Kenneth McFadyean, M R C S Eng.

In the following case abortion had an unu cause and an atypical history

On August 16th, 1933, a multipara, aged 30, comp of faintness. The pulse-rate, temperature, blood press and bowel actions were all normal. Menstruation h been normal, the last two periods having begun June 22nd and July 27th It was thought that th faintness might be due to the prevailing excessive hea

From that time the sequence of events was as follo August 21st: sickness increased Sept 11th menstrua tion occurred; its commencement and course w normal. 12th: the patient was unable to retain a food 13th. a practitioner in attendance diagnos a gastric ulcer and ordered confinement to bed w peptonised milk diet. 15th: no milk retained, pati was ordered albumin water From this date to Sept no food or liquid was retained 18th · the patient w visibly wasted and had signs and symptoms of acid On examination the fundus of the uterus was felt above pelvic brim, while, per vaginam, the enlarged uterus c be felt depressing the vaginal roof both anteriorly posteriorly The uterus felt almost globular, and was an even resistance It was estimated to be the size o 14 weeks' gravid uterus

The possibility of an hydatidiform mole was A consultant regarded the case as a straight pregnancy of ten weeks' duration.

Sept. 21st · menstruation again commenced, normally. 24th. hæmorrhage was severe, caused its cessation 26th: a fœtus was expelled, placenta was retained with no bleeding 28th general anæsthesia the cervix was found to be conside dilated, but still cylindrical. The placenta was compl separated in the lower portion of the uterus Above was a local contraction ring, dilatable by the but reclosing whenever the fingers were Above this ring was a cavity not more than half th of the lower segment. In it, arising from the wall, just below the fundus, was a polypus attache a broad flat pedicle Its removal was accompl with difficulty, owing to the presence of a local ring There was very little bleeding

The patient made an uninterrupted reco and menstruated normally on Nov. 6th. S histological examination showed the polypus t fibro-adenomatous, and to have a decidual cove The fœtus was submitted to Prof. H. A Harris, estimated its age to be not less than 13 nor more 14 weeks

Herne Hill, London.

RECURRENCE OF DUODENAL ULCER YEARS AFTER GASTRO-JEJUNOSTO

By M J. Smyth, B Sc, M.Ch. N U.I., F.R C S

HON SURGEON TO THE HOSPITAL OF SS JOHN AND ELIZ LONDON, FORMERLY FIRST SURGICAL ASSISTANT A THE LONDON HOSPITAL

Whatever may be the objections to gastro jeju tomy as a treatment for duodenal ulcer, this at least can be said in its favour—it almost al brings about healing of the ulcer An efficient g jejunostomy opens up a new by-pass for the sto contents, and the ulcer, freed for the greater from the passage of acid chyme, and bathed i alkaline medium, is left at rest to heal Even i operation be done in an unsuitable case, as tance, in a male patient under the age of 30, with h acidity and a small high, rapidly emptying mach, the duodenal ulcer will heal, provided that technical requisites of the operation have been filled In such a case there is danger of ulceration aking out afresh, but this time the ulceration lares itself, not in the duodenum, but somewhere the neighbourhood of the anastomosis—i e, tro jejunal ulcer The case I record here is usual inasmuch as fresh ulceration occurred in duodenum six years after gastro jejunostomy

The patient, a man aged 35, was admitted to the ndon Hospital on Dec 12th, 1927, under the care of E C Lindsay Six years previously he had had an eration elsewhere for perforated duodenal ulcer, the foration had been closed and gastro jejunostomy formed Two days before admission to the London spital he had an attack of hæmatemesis, and on the rning of admission there was a hæmatemesis plus læna The pulse rate, on admission 116, was 136 a few urs later, and the patient was exsanguinated I operated Mr Lindsay's request, after a transfusion of a pint of ole blood There was no ulceration at the site of astomosis, the stomach and jejunum being normal in pearance, the anastomosis was small and close to the pylorus, and there was a scar of a healed ulcer on the anterior surface of the duodenum A penetrating ulcer, however, was felt on the posterior surface of duodenum The gastro-duodenal artery was identified and ligatured, and a purse string suture enfolding the anterior surface of the pylorus and duodenum was inserted Recovery was uneventful and the patient was discharged to convalescent home on Jan 7th, 1928

On May 15th, 1929, he was readmitted complaining of having passed tarry motions for a week The test meal showed a high level of acidity, and on X ray examination the opaque meal did not pass readily through the stoma, most of it passing through the pylorus There was no evidence of jejunal ulceration

A second unusual feature of this case is that the recurrent ulcer which caused hæmatemesis was on the posterior wall of the duodenum, whereas the ulcer for which the gastro jejunostomy had been performed was a perforated one on the anterior surface The stoma was of small diameter and was placed close to the pylorus, although there did not seem to be any anatomical abnormality which had influenced the selection of this site for anastomosis

I am indebted to Mr Lindsay for permission to report this case

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF LARYNGOLOGY

The meeting of this section held on Nov 2nd, der the presidency of Mr W M Mollison, was iefly occupied with a discussion on

Laryngeal Paralyses

Dr D Durward, dealing with the anatomical pect, said that the bulbar portion of the accessory rve must be regarded functionally, as part of the gus complex, as the motor companion of the vagus, iose action could be observed in the elevation of rtain striped muscle fibres about the neck It was fferent from the spinal part of the accessory nerve lmittedly this was connected with the bulbar part a short distance, but later it became dissociated m it, and showed no subsequent connexion Two anches of the vagus complex were important from e point of view of laryngeal paralysis—the superior ryngeal and the recurrent or inferior laryngeal rves These anastomosed in the region of the ynx It had been thought that certain fibres the superior laryngeal nerve would be found to distributed in the field of the recurrent or the erior laryngeal nerve, and that the superior nerve uld be involved in certain muscles of the larynx, t recent work on the innervation of these muscles the dog, suggested that the connexion between two nerves was *of no significance* The superior yngeal nerve must be regarded as largely sensory, embraced various types of fibres, and so there ght be a variation of function but there was no tor function on striped muscle The recurrent yngeal was a mixed nerve and it gave the motor ply to the crico thyroid The nucleus ambiguus s the motor centre for the larynx, and the tractus itarius the sensory nucleus

SURGICAL ASPECT

Mr C A Joll dealt with the surgery of laryngeal ralysis, limiting his remarks to his experience with thyroid gland The surgeon must be acquainted h the course of the recurrent laryngeal nerve in order to avoid causing paralyses This nerve was seldom exposed in routine operations on the thyroid gland, because both lobes could usually be dislodged without disturbing the loose cellular tissue embedding the nerve But when the artery was difficult to identify, or was in an unusual position, exposure of the artery revealed also the nerve Mr Joll described certain anatomical pitfalls A rare anomaly was that in which the vagus gave off the recurrent nerve relatively high in the neck, so that it merely crossed the common carotid to reach the posterior border of the thyroid gland more transversely than usual Excluding thyroid cases, few causes of laryngeal paralysis were of much practical surgical importance It was difficult to obtain a clear idea as to the incidence of pre and post operative laryngeal paralysis because (1) laryngoscopic examination was seldom carried out systematically before and after operation in a series of cases, and (2) the available statistics were largely based on the patient's capacity to speak plainly If no gross defect was noticed, laryngeal paralysis was assumed to be absent

Pre operative paralysis might be either bilateral or unilateral, complete or incomplete, in malignant goitre, and was probably due to direct invasion of the nerve In simple goitre the paralysis was due to stretching of the nerve over a tense bulky, or rapidly growing nodule or cyst, but it might also follow the attacks of low inflammation common in and around nodular goitres or result from hæmorrhage into an adenoma In 1000 non malignant goitre cases at the Mayo Clinic, Matthews found 262 cases of paralyses of some degree but in this return there was no differentiation between functional and organic lesions In 422 of Mr Joll's cases there were five functional and eleven organic lesions In complete paralysis of one recurrent nerve following operation on the thyroid gland, the cord might occupy, from the outset, any position from the cadaveric to the median In incomplete paralysis, which in Mr Joll's experience was a rare post operative phenomenon, there was little change in the position of the vocal cord but a defect in its power of abduction Delayed onset of paralysis, which was very rare was due to cicatricial contractions in the neighbourhood of the nerve

With regard to prognosis, Feuz had reported disappearance within six to twelve months of approximately 50 per cent. of the cases of complete and incomplete recurrent laryngeal paralysis in the Lausanne series of 250 cases. The outlook for pre-operative paralyses was apparently less favourable than for post-operative ones. Fortunately, compensatory changes made functional recovery commoner than was restoration of nerve function.

As to treatment in organic paralyses, prophylaxis constituted the main hope In the course of thyroidectomy the nerve might be damaged, first, by the operator failing to keep strictly to the zone between the true and false capsules and the thyroid gland. Careful stripping off of the false capsule would ensure that the nerve, even if adherent to the goitre, was pushed back into relative safety. Secondly, during ligation of the inferior thyroid artery this vessel should be tied in continuity at the maximum distance from the gland. A further cause of damage was severe stretching of the nerve in the course of the dislodgment of a large or fixed goitre. Lastly, damage might be caused by incorrect methods of suture of the gland tissue. Hæmostatic stitches must be placed in the remnants of gland tissue in such a way that they did not encroach on the danger area. The suture must pass entirely through, not behind the thyroid tissue. Attempts to practise secondary nerve suture for recurrent nerve lesions seemed to him to have little chance of success. In bilateral paralysis the immediate necessity was for a tracheotomy low rather than high to avoid the danger of laryngeal stenosis. The distinction between bilateral laryngeal paralysis and tracheal collapse was very difficult, when the condition cleared up quickly following tracheotomy the actual lesion was almost certainly confined to the trachea Chevalier Jackson had reported promising results following ventriculo-cordectomy through an endoscope; if necessary, both sides could be attacked at separate sittings. The scope of this operation seemed to be similar to that successfully carried out by Sir Frederick Hobday for "roaring" in horses The operation should be postponed for at least six months from the onset of the paralysis Rethi, and later Kahler and Albrecht, had successfully detached the adductors of the cords from their insertion after laryngo-fissure had been carried out Semon advocated, for bilateral cases, the induction of paralysis of the crico-thyroids by injecting the external laryngeal nerves with alcohol; he claimed that by abolishing the tensor effect of these muscles the cords moved apart and so breathing was much improved, but at the expense of phonation.

PATHOLOGICAL AND CLINICAL ASPECTS

Dr. GEORGE RIDDOCH said that the three functions of the larynx—respiration, phonation, and protection of respiratory passage—were subserved by the cartilaginous and fibrous framework and its muscles, the chief of which regulated the glottis by acting on the vocal cords Adduction of the cords was better provided for than abduction, as all the muscles were adductors except the posterior crico-arytenoids. The situation became precarious to life when this disproportion between adduction and abduction was increased by the presence of nerve or muscle lesions On the other hand, hysterical disorders of the larynx were most often in the direction of ensuring a free airway at the expense of voice production. Except for the crico-thyroid, all the laryngeal muscles were supplied by the recurrent laryngeal It was formerly considered that the internal branches of the superior laryngeals were the sole sensory nerves, but there wa little doubt that the recurrent laryngeals contai sensory fibres going to the larynx below that level.

Dealing with the symptoms and signs of laryng paralysis, Dr Riddoch said that weakness or paraly of the laryngeal muscles was recognised by f symptoms and signs. (1) the voice was changed o lost; (2) respiration was affected, (3) coughing wa diminished or abolished; (4) the laryngoscope showe impairment of the vocal cord movements He relate the main symptoms and signs which followe muscular weakness of the larynx, dividing them int supranuclear lesions and nuclear or peripheral on Causes of laryngeal paralysis he grouped ac to the main situation of the lesion. Of supranuc lesions, in parkinsonism the only prominent laryn disorder was a low-pitched, monotonous voice; patient had a mask-like face, a bent body post and rigidity It was a syndrome resulting from les of the motor basal ganglia due to several causes double hemiplegia and pseudo-bulbar palsy a sim dysphonia occurred. The nuclear lesions he divi into vascular, inflammatory, and traumatic In vascular, hæmorrhage with survival was rare usual lesions were thrombosis of the basilar or posterior inferior cerebellar arteries, due to ei arterio-sclerosis or syphilis. The onset was sudd but might be preceded by other signs of cere arterio-sclerosis or syphilis, such as headache, gid ness, mental impairment, or ocular palsies In inflammatory category, acute anterior poliomye might attack the pons and bulb, causing nucl palsies, weakness of limbs, and cerebellar defe The death-rate from respiratory paralysis was h Ascending atonic paralysis, which began in the limbs and spread to upper limbs and trunk, mi reach the brain stem and cause, among other sy toms, weakness of the vocal cords It was m commonly due to severe polyneuritis from such ca as alcoholic indulgence, diphtheria, and other cations, in a recent case, a boy aged 10, it followed acute streptococcal infection of the ton Disseminated sclerosis sometimes declared itself symptoms of existence of lesions in the pons or b and acute encephalitis lethargica sometimes attac the bulb and caused laryngeal palsies Severe traum injuries of the bulb were almost always fatal, when the injury was less severe, weakness of laryn muscles was sometimes found with other bulbar s Progressive bulbar palsy, rare under 50 years of a attacked the motor nuclei of the bulb, so that w the larynx became affected, dysarthria, especially consonants, had become evident. Fibrillation tongue occurred early, wasting later, and still l progressive paralysis Tumours of the cereb might lead to laryngeal palsy by either compres or invasion, but the diagnosis was rendered clear the concurrence of hydrocephalus and cereb disorders Extracerebellar tumours, also aneury of the basilar or vertebral arteries, compressed bulb and cerebellum, as well as the cranial n arising from the pons and medulla

With regard to peripheral lesions, the vagus other bulbar nerves could be damaged within skull or in the jugular foramen, such as by infla mation secondary to otitis or infective lateral s thrombosis, or from syphilis or a tumour The v in the neck was sometimes injured by wounds o pressure from enlarged glands, or from aneury the carotid. Severe polyneuritis might result bilateral vagus lesions, but the consequent laryn palsy was usually slight, and there was an associ cardia It was seldom that the superior ngeal branch was damaged alone, injury of the rent laryngeal, however, was the commonest of unilateral paralysis of the vocal cord lysis of individual muscles in the larynx was ys due to local causes, such as inflammation or this Laryngeal palsy was frequently a symptom yasthenia gravis In this condition life might be tened, or ended, from feebleness of the respiratory les Aphonia was sometimes a hysterical mani- tion Here absence of adduction was confined oluntary effort as the cords moved normally in reflex acts of respiration and coughing Dr loch ended by a reference to laryngeal spasm ment spasm of the abductors sometimes followed en fright or severe pain Laryngismus stridulus, h was usually met with in children had become with the diminution in the onset of rickets stridulus was reflex in origin, and, in susceptible le, might be due to the dryness of the larynx h followed mouth breathing Adductor spasm also seen in association with the tabetic crises in rophobia, in tetany, and it was the cause of the heard before the onset of an epileptic fit

THE VETERINARY ASPECT

r FREDERICK HOBDAY spoke on the operation of tricle stripping in the horse for the cure of aring" which he had now performed 4000 times object of the operation in the case of the horse to permit it to run long distances without ngeal difficulty, and it was generally acknowledged t the animal was much more valuable after than ore the operation Roaring was a frequent sequel strangles, pneumonia, and influenza Nearly ays the paralysis was a left sided one only once he seen the right side paralysed alone After operation the horse should be rested for at least weeks—he preferred three months—so as to ure firm adhesions The external wound healed twelve to fourteen days He showed a film of the eration

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SECTION OF ANÆSTHETICS

At a meeting held on Nov 2nd Dr H P CRAMPTON e his presidential address on

Factors, other than Anæsthetics, Affecting Anæsthesia

proposed to discuss these factors in three groups der the headings (1) the patient, (2) the anæs- tist, and (3) the surgeon and his operation

THE PATIENT

Mentality, physique, habits, and certain pathological ditions, he said, were among many factors uencing anæsthesia A slender, placid girl of 20 s easier to anæsthetise than a fat and flustered man of 50 the latter tending to be short winded d easily cyanosed, but mentality was more impor t than physique A patient could be made onscious in a matter of seconds but "frightened" piratory, cardiac and spasmodic effects might sist for some time, though rarely for more than f an hour Real panic, which was rare, added a nite risk to any mode of induction Most patients re mildly apprehensive and those who admitted ir fear were, as a rule quicker in reaching a smooth sthesia than those who suppressed it As to bad its, Dr Crampton said that alcoholics require ge doses and recover consciousness very quickly y are seldom sick afterwards. He recognised two distinct types of alcoholic (1) The cheery soul who drinks to excess in company He comes up smiling for his anæsthesia, takes large quantities and may be noisy during induction, but once "under," sleeps like a babe, and is really quite a satisfactory patient. (2) The other type drinks to excess because he lacks moral courage to resist He exhibits the usual nervous signs extending far into anæsthesia Tobacco fiends often had an irritable cough reflex, necessitating an unusual depth of anæsthesia, moreover, they frequently suffered from vague cardiac sensations which convince them that they are not strong enough for an operation—whereby they became mentally resistant to anæsthesia Among pathological conditions, anæmia fever, exhaustion, and shock were conditions promoting an easy anæsthesia, but the margin of safety was smaller Fortunately for anæsthetists, patients regarded as bad operation risks more often died after the cessation of, rather than during, full anæsthesia In desperate cases he preferred to continue anæsthesia—if necessary in the lift—rather than stop before the end of the operation This gave a better chance of getting the patient back to bed alive, where restorative measures were the more easily applied

THE ANÆSTHETIST

The anæsthetist could bring to bear on anæsthesia at least three factors stage management, judgment and personality Without these attributes he remained a mere retailer of dope For example, rest before anæsthesia was often not long enough, the patient must be given the means of mild mental occupation such as a light novel a pack of patience cards, and some *easy* crossword puzzles The patient's habits in respect of tobacco or alcohol should be altered as little as possible on the eve of anæsthesia Stomach-tubes, enemas, purgatives, and starvation were liable to exhaust and distress the patient, to the detriment of anæsthesia Stomach tubes should not be passed till the threshold of unconsciousness At this moment the cough and swallow reflexes could protect in case of vomiting and the patient was spared a very trying experience Friendly chat for a few minutes beforehand comforted most patients, who should be allowed to have as many pillows as they liked and to assume any position in reason An anæsthetist with the gift of being able to see things from the patient's point of view was able to gain his confidence

THE SURGEON AND THE OPERATION

Surgeons could exert a powerful influence on anæsthesia Any attempt to hurry the induction or to start the operation before the patient was ready defeated its object The personal factor could certainly influence anæsthesia Mr Scalpel liked Mr Doper, anæsthesia was mostly smooth and satisfactory Mr Scissors was somewhat temperamental and antagonistic to Mr Doper, it would be surprising if with this combination anæsthesia reached the same peaceful standard

The actual operation could not fail to affect anæsthesia in varying degree It was well known that pulling, tearing, and stretching affected anæsthesia more than cutting with a sharp knife and that upper abdominal reflexes were more powerful than pelvic; that a total gastrectomy would disturb more than removal of a lipoma; and also that operations involving much hæmorrhage would call for a marked reduction in dosage—an easy matter with inhalation methods but not so simple with intravenous or rectal therapy In major breast operations premedication might bring an added risk to anæsthesia, since oozing might be very severe. Dr. Crampton spoke of the dilemma in which an anæsthetist might find himself after a death on the table during a severe operation If he argued that the anæsthetic had nothing to do with the death he was liable to be asked if the patient would have died at that particular moment if no anæsthetic had been given. In many cases the answer might well be that the patient would not be dead if he had been given the same anæsthetic for the same time *without the severe operation.* The position of the patient might introduce undesirable complications, or might facilitate anæsthesia In empyema and such operations an intelligent and willing dresser was preferable to any mechanical arm-rest The Trendelenburg position mostly made for safety and ease of anæsthesia, but might cause considerable respiratory embarrassment in obese subjects under full narcosis A sudden return to the horizontal position might be fraught with danger. The rolling of a patient from side to side after deep anæsthesia or severe operations, in order to apply a many-tail bandage or remove the ambulance canvas from the bed, might cause very profound depression. It was easy to lift a patient like a horizontal poker, dry him, put on the binder, and remove the canvas, but it took three people to do so The optimum time for anæsthesia in cases of severe trauma required nice judgment. As a rule such patients were capable of considerable improvement under suitable treatment but would deteriorate again. In casualty clearing stations during the war special groups of officers had charge of resuscitation work and were responsible for sending patients to the theatre at the peak phase A pause for recovery during operations involving very severe hurt might be the means of making a successful termination possible.

Dr. Crampton concluded with some comments on the desirability of punctuality. A patient, keyed up for the ordeal, might be expecting an operation at 2 o'clock Some form of premedication might already have been administered when the news came that the surgeon had been delayed and could not operate till 5 o'clock. Food had been timed for a 2 o'clock operation and it was now too late to give more The premedication effect would wear off and the unfortunate victim would have to screw up courage all over again. Such eventualities worked against the ease of mind and body that made for smooth anæsthesia

ROYAL ACADEMY OF MEDICINE IN IRELAND

At a meeting of the section of surgery on Oct 26th Mr. Seton Pringle gave a presidential address on

Acute Cholecystitis

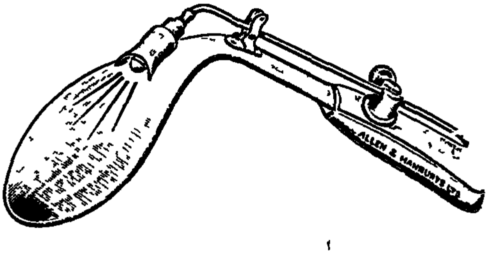
In considering what is the best time for operation, he pointed out that an increasing number of surgeons advocate immediate or early intervention In his own view immediate operation was justified only in very acute cases showing much toxæmia, very severe pain, persistent vomiting, and rigidity He was satisfied that the great majority of cases would settle down and allow a safer and more complete operation to be carried out in eight to ten days He did not approve of further postponement, for there were often no definite clinical signs that a pericholecystic abscess had formed after perforation He regarded cholecystectomy as the operation of choice; cholecystostomy should be reserved for very toxic or jaundiced p who could stand only a minimum of interfer and for those whose gall-bladder was partic inaccessible

Mr. R Atkinson Stoney thought that b operating it was safe to wait and see what to happen. Meanwhile it was usually possib improve the patient's condition by giving solution —Mr T. J. D. Lane did not see any p postponing operation for a few days At the e two or three days the patients were in a much condition than they were twenty-four hours after attack —Mr. Henry Stokes was not dispo operate after a first attack of acute cholecystitis. would like to know how much a gall-bladder recover. An appendix could recover after an attack in a fortnight to what was macroscop normal, and he thought that if a gall stone passed the gall-bladder would also return to norm Mr. H S. Meade felt that in acute cases op should not be delayed —Mr. A B Clery said th acute cases if he had to operate he merely drained gall-bladder, usually under a local anæsthetic, he only operated on an acute case when it absolutely necessary to do so. The usual reas operating early was that there was a doubt about diagnosis.

NEW INVENTIONS

RETRACTOR FOR INTRA-ORAL

One of the greatest difficulties in intra operations on the jaw or teeth is the lack of vision due to obtrusion of the tongue over the of operation The retractor here illustrated has designed to overcome this difficulty and efficient illumination It is inserted with the side of the blade parallel to the tongue and rotated so that one margin lies in the floor of mouth, and the other against the hard palate,



rounded end of the blade rests upon the pillar of the fauces In this position the is self-retaining, and allows a good approach field of operation The light is supplied by a dr battery; it can be rotated on its own axis, or m project from the blade of the retractor, as re and it is maintained in position by means of a set screw. Over the bulb is a thin metal arranged to prevent light from shining into th of the operator, and to direct the illumination

The whole apparatus is finished in so that it shall add, by reflection, to the of the field Allen and Hanburys Ltd W street, W 1, are the makers

Bernard Johnson, M

REVIEWS AND NOTICES OF BOOKS

iffuse Sclerosis

Encephalitis periaxialis diffusa By L BOUMAN, M D, Professor of Psychiatry and Neurology, Utrecht University Bristol John Wright and Sons Ltd, London Simpkin Marshall Ltd 1934 Pp 160 15s

THE disease of the central nervous system which orms the subject of this monograph, usually known s "Schilder's disease," has attracted relatively ttle attention until recently, most of the published ases have been described only within the last decade childer was not actually the first to describe the isease, but he certainly deserves the credit for its ecognition as a type apart It is fortunately a rare isease, Prof Bouman must be unique in having had x cases of his own The full description of these ccupies nearly half of the volume, and in the maining chapters the author summarises, from his wn experience and from the records of published ses, the clinical and pathological features of the sease as a whole The time was ripe for a monograph this subject and English neurologists will be glad have so authoritative a survey published in their wn language

Unfortunately, as with the other demyelinating seases of the nervous system, the era of description is not yet given way to an orderly classification in iological terms Hence we cannot be sure, when speak of such conditions as encephalitis periaxialis ffusa, disseminated sclerosis, neuromyelitis optica, d so forth, whether we are dealing with varieties one disease or with a number of different diseases ving certain histological features in common A rther difficulty arises in children from the existence certain familial affections of the brain that histo gically have much in common with those already ntioned Prof Bouman preserves an open mind on the possible relationships within this class, but discussion of the differential diagnosis of diffuse erosis offers incentive to further investigation s remarks are fuller on the clinical than on the thological side, and one could wish that, from his nsiderable experience, he had devoted more space the histological distinctions between the different orders of this kind, familial and otherwise, that se in infancy

The production of this book and the composition the text reflects great credit upon all concerned

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perimental Physiology

ifth edition By Sir EDWARD SHARPEY SCHAFER, R S, formerly Professor of Physiology in dinburgh With the coöperation of W A BAIN, h D, Lecturer in Experimental Physiology in the niversity of Edinburgh London Longmans reen and Co, Ltd 1934 Pp 168 6s

THE first half of this book is devoted to classical uscle nerve" physiology and the necessary trical apparatus The descriptions of experiments concise and the diagrams exceptionally clear The mainder of the book deals with exercises illustrating functions of the heart blood vessels respiratory paratus central nervous system and special sense ans These sections are not so satisfactory While experimental instructions are complete up to a nt the same care does not seem to have been oted to the introduction of the student to mammalian experiments as to his introduction to electrical apparatus On the same half page may be found the following sentences, each introducing a series of experiments "A kidney, the spleen, a loop of intestine, or a limb is placed in a plethysmograph and the volume changes recorded" "Expose the stellate ganglion " "Expose a limb nerve " "Expose the splanchnic nerve on one side" These instructions seem inadequate in a book which describes carefully the construction of a Daniell cell, in short, it contains too much or too little An enormous improvement could be made by quite a slight rearrangement and a clear indication of what instructions are intended for the student and what for the demonstrator It is made clear in the preface that no work of a chemical nature is included, so that experiments on the respiratory gases, blood (including hæmocytometry) and matters relating to *them, such as metabolism, are lacking*

The chief virtue of the book, and one not to be underrated, is as a sound introduction to and record of many fundamental experiments which nowadays are apt to be neglected

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The Ætiology and Treatment of Spasmodic Bronchial Asthma

By H GORDON OLIVER M D London H K Lewis and Co, Ltd 1934 Pp 48 3s 6d

DR Gordon Oliver's name must be added to the long list of those who believe they have discovered the cause and the cure of asthma Asthma, he holds, is a mycotic infection A monilia can be cultured from the sputum and the paroxysms are coincident with increased activity in the life cycle of the fungus The familial incidence of the disease he believes to be the result of contagion, and milk and butter are important vehicles of infection Improvement follows treatment with very large doses of potassium iodide, usually 60 grains a day, and monilia vaccines Critical readers may feel that the evidence on which the hypothesis is sustained is insufficient, and that an enormous amount of sound work on the allergic basis of asthma has been disregarded *It is not clear whether* Dr Oliver regards hay asthma as a broncho moniliasis, perhaps he would say of this, as he says of aspirin-sensitivity "No doubt there is some element of mental suggestion here" One is ready to believe that fungus sensitisation plays an important part in asthma, and that potassium iodide may with advantage be given in larger doses than is customary, but the suggestion that asthma is always the result of mould growing on the bronchial tree is not convincing

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Encyclopædia of Sexual Knowledge

By Dr A COSTLER and Others Edited by NORMAN HAIRE London, Francis Aldor 1934 Pp 647 30s

WE understand that this book was originally written in French and published in France where it had a success Some of the chapters are well written and appropriate for lay consumption others less well adapted for this purpose Extensive quotations are made from books the sale of which has hitherto been confined to members of the legal and medical professions As a whole we consider the book hardly suitable for broadcasting among the lay public

The Chemistry of the Hormones

By BENJAMIN HARROW, Ph D., Associate Professor of Chemistry in the City College, College of the City of New York; and CARL P. SHERWIN, D.Sc. M D., Dr.P.H , St. Vincent's Hospital and French Hospital, New York City. London: Baillière, Tindall and Cox 1934. Pp 227. 11*s*. 6*d*.

SUMMARIES of literature are of two kinds—mere compilations or highly critical reviews in which worthless matter is ruthlessly suppressed by the reviewer. To-day the quantity of literature on biochemistry, and particularly on the hormones, is so great that only the second type of review is of any value Unfortunately this book hardly really belongs to either category. Admittedly the work of condensation has been done carefully, accurately, and well, and a great deal of the matter which has been definitely disproven is not referred to; but the whole production is colourless, and the authors do not succeed in making the essential points stand out sufficiently clearly One doubts in some cases whether they have really studied the original papers For example, a statement on page 35 reads as follows: "This discovery (of insulin) was a fitting termination to a series of researches, begun by Mehring and Minkowski in 1885, which had for their object a detailed study of the relationship of the pancreas to diabetes." The date of the publication of the paper by von Mehring and Minkowski is 1889; and it is generally admitted that they had no idea at that time that the removal of the pancreas would produce diabetes since at the commencement of their investigations they were interested in the rôle of the pancreas in digestion Many minor errors of this nature throughout the work cause one to doubt the fundamental reading of the authors, and raise the suspicion that whilst the later references may be more accurate, they have relied upon reviews at any rate for their earlier ones A more detailed account of the chemistry of auxin should have been given; the description on p. 215 is now obsolete Moreover a considerable amount of important work has been done on the chemistry of the corpus luteum hormone which has evidently escaped the attention of the authors. The book undoubtedly has value if only for its references

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Manchurian Plague Prevention Service

Shanghai National Quarantine Service. 1934. Pp. 469.

THE Manchurian Plague Prevention Service was established in 1912 following the frightful epidemic of the two previous years Twenty years of useful work, being the first systematic organisation of public health in China, followed, and then the revolutionary events in Manchuria severed the continuity of administration and put an end to this branch of medical research But when the Far Eastern Association of Tropical Medicine decided to hold its ninth congress in the autumn of this year at Nanking, it was felt that the delegates of that congress would welcome an authoritative résumé of the activities of the Manchurian Plague Prevention Service compressed within the convenient limits of a single volume Accordingly such a record was prepared, its editing being undertaken by Dr. Wu Lien-Teh, the first director of the Service, who secured many authoritative collaborators. The contents of the book are of great and varied interest. A short history of the Service by the editor is followed by an informing paper written jointly by Prof. Sims Woodhead and the editor on the histology of the lesions in pneumonic plague. The second pneumonic plague epidemic in Manchuria, occurr ten years after the first, is very fully dealt with, t clinical observations and pathological findings be closely recorded. In the summer of 1923 it appea to be established by some interesting researches th the Siberian marmot or tarabagan was subject epidemics of plague, when the rôles of the [illegible] flea, louse, and tick were investigated with the [illegible] that the fleas were incriminated as definitely able play an important part in the spreading of [illegible] The authors of this section of the book believe th outbreaks of plague in Siberia have been due to cause, and that further inquiry into the existence spreading of plague among wild rodents might expl much that remains obscure

There are interesting chapters on the p[illegible] cholera in China and Japan with special reference the epidemic of 1926, while other sections deal w scarlet fever and venereal disease in China The b ends with chapters by the editor on medical progr in China since the institution of the republic, on early days of Western medicine in China, and early Chinese travellers. This later matter [illegible] important chapter in medical history, and Wu Lien-Teh, from whose pen much of it comes, to be congratulated on the preparation and issue a valuable book.

Medicine Marches On

By EDWARD PODOLSKY, M.D. New York Har Brothers 1934. Pp 343 16*s*.

WE should have thought that the public taste popular books on medical progress would have satiated by this time And most intelligent lay will, we imagine, find this recent addition to the incredible in its flamboyant exaggeration as medical men will find it distasteful, it will acceptable only to those who find their satisfact in sensational journalism. Medicine has made siderable, and in some instances startling, prog in recent years; it has perhaps illuminated Dr Podolsky calls "sex mysteries and soul chemistr but if he will sit down and think of the common rheumatism, and arterio-sclerosis he will per come to a more humble frame of mind; at present is intolerable It appears from the wrapper that is 32 years old.

ACTA CANCEROLOGIA

UNDER this title the first number of a new jo for the publication of original papers dealing with aspects of cancer has just made its appearance is published in Budapest and is edited by Dr P. Ge assisted by Prof. F. Blumenthal, who, since he to resign his directorship of the Institute for Ca Research in Berlin University and the editorship the *Zeitschrift fur Krebsforschung*, is now working director of a cancer institute in Belgrade journal has the support of a number of well cancer workers, especially from Eastern Eu Papers will be published either in German, French English, and each paper is provided with a in these three languages. The first number of pages contains ten communications of consider interest; one by Chlopin and Zymbal deals with th culture of cells of melanomata, one by Lissow with the granuloma cell tumours of the ovary, Peller with race and cancer, and one by Flaks Grynkraut with the effect on tumour growth of tion of the host The papers are commendably and succinct, the figures are well reproduced, the editors can maintain the high level of this n the journal should be successful. Messrs H. Lewis and Co. are the British agents and the subscription is £4.

THE LANCET

LONDON: SATURDAY, NOVEMBER 10, 1934

DIRECT REPRESENTATION ON THE GENERAL MEDICAL COUNCIL

Sir Norman Walker has been nominated to represent the medical practitioners of Scotland on the General Medical Council. That his nomination should have been unopposed was not only seemly in respect of the candidature of the president of the Council but also bears witness to the esteem in which he is held in Scotland. The only drawback to an unopposed election is that it affords to his fellow countrymen no opportunity of expressing their esteem. We therefore take the opportunity of reproducing here the substance of a letter signed by 15 Scottish practitioners whose names are given below,[1] which begins by pointing out that Sir Norman's position as president of the Council is an honour never before attained by a direct representative. The letter goes on:—

> Sir Norman, from his early experience in general practice, knows well its difficulties, even its hardships. Since leaving it for the specialty of dermatology he has been unremitting in the work he has done in medical administration, and during the war as chairman of the Emergency Committee and as Commissioner for Medical Services for Scotland with the Ministry of National Service did most important work for the community. After the war he was selected by the General Medical Council and sent to India to report upon the conditions of medical education—a piece of work for which he received the honour of knighthood in 1923, and when, five years later, it proved necessary to review the work then inaugurated Sir Norman again undertook the investigation. For 3 years he was chairman of the examination committee as also of the business committee, and the impress of his work was such that on the retiral of the late Sir Donald MacAlister he was elected to succeed him.

The letter concludes: "It is not for us to say to the Council who should be their president, but we in Scotland should see to it that Sir Norman is there at their service." There is one feature of Sir Norman's work as a councillor to which his fellow countrymen have not alluded. He was one of the first to recognise the importance of the preventive aspect of medicine in the curriculum and was author of a proposal that a public health expert should accompany the three inspectors on their visitation to examining centres, in order to see that preventive medicine was given its rightful place in the curriculum in accordance with the Council's new rules of 1922. It was no fault of Sir Norman's that the proposition was not accepted when he made it. It certainly will become the practice next time inspectors are nominated.

Dr Leonard Kidd has also been nominated without opposition to represent medical practitioners resident in Ireland. He has been a member of the Council since his succession to Sir William Thomson in 1906.

The election of direct representatives for England and Wales has not been such a simple matter. Mr Bishop Harman's term of office expires on Nov. 26th, Sir Henry Brackenbury's on Jan. 1st, 1935, and the Medical Act of 1886 did not permit of an election to fill the two vacancies at the same time. Mr Harman has now been returned by 10,980 votes to Dr Gregg's 3702, but it is not to be expected that Dr Gregg will be discouraged, for from 1924 when he first stood he has increased his vote at three successive elections from 2125 to 3108 and 3194, and he is now opposing Sir Henry Brackenbury at an election for which ballot papers will be in the post as we go to press. As we announced last week, Dr Mabel Ramsay is also contesting this seat. She has a long and honourable record of public service in the British Medical Association and on panel and local medical committees at Plymouth, and is soliciting votes because she believes the time is opportune for the appointment of women on the Council, the total number of women on the Register being now more than 5000. Those who recall the unopposed candidature of the late Dr Christine Murrell must regret deeply that it is on this occasion impossible for Dr Ramsay to be successful without the Council losing the services of Sir Henry Brackenbury, whose ability to represent the profession directly needs no word from us. The election of direct representatives, as we have pointed out, does not really take place on the day fixed by the Council but at the moment when a notice appears in the Supplement of the *British Medical Journal* indicating the result of the selection by the constituencies in the Representative Body. The medico-political committee of the B.M.A. has considered this criticism, recognising the hardship of candidates who might have strong support in their locality but had no chance against the Association's nominees. The view, however, prevailed in the committee that the representatives selected by the B.M.A. meeting felt their position on the General Medical Council to be of greater importance by the procedure than it would have been had election followed sporadic candidature. And it was stated in the committee that the experience of the dental bodies tended in the same direction. There may be rough justice in the elections as at present conducted, and nothing need stop electors from registering their votes on what they consider to be the merits and claims of candidates.

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[1] The letter supporting Sir Norman Walker's candidature is signed by Andrew Allison, M.B., B.Sc., F.R.F.P.S. Glasg.; Herbert Brown, M.D. Glasg.; R. C. Buist, M.D., LL.D. Edin.; A. Chalmers, M.D., LL.D. Glasg.; D. Elliot Dickson, M.D., F.R.C.S.E.; C. E. Douglas, M.D., LL.D. Edin., F.R.C.P.E.; [illegible] Laing, M.B. Edin.; John S. Muir, M.B., M.R.C.S.; [illegible] Ashley W. Mackintosh, K.C.V.O., M.D., F.R.C.P.E., LL.D.; [illegible] Hunter; [illegible] Eaton, M.D. Edin.; James R. Simpson, M.D., F.R.C.P.E.; Murray R. Stewart, M.B., C.M. Edin.; W. L. Terre, M.D. Edin.; Robert Thin, M.B., F.R.C.P.E., LL.D.; George Watson, M.B. Aberd., F.R.C.S.E.

DEADLY ILEUS

PROFOUND circulatory collapse follows rapidly on complete obstruction of the intestinal lumen. This fact, a matter of common observation, has not yet been completely explained. There does not seem to be prima-facie reason to expect a patient with malignant stricture of the colon to become moribund within 48 hours of the occlusion becoming complete. Much experiment and clinical observation have been directed to the solution of this problem of circulatory failure. A recent meeting of the Swiss Surgical Society at Basle, fully reported in the first (June) issue of the *Helvetica Medica Acta*, made it only too clear that advance in surgical technique, and in modern methods of diagnosis and treatment, have done little as yet to diminish the fatality of mechanical obstruction or of the paralytic ileus which follows surgical interference in the abdomen. Many surgeons regard the clinical picture of ileus as due to the absorption of poisonous substances evolved in the intestine above the obstruction In loops not only obstructed but strangulated the nature of the contents has been shown to be extremely toxic; Williams[1] has ascribed this toxicity to the exotoxin of *Bacillus welchii*. Holt,[2] while agreeing that this is the predominating organism, believes the toxæmia to be due to the absorption of a proteose, possibly produced by the action of *B. welchii* on the intestinal contents. The effect of *B. welchii* antitoxin should decide between them; but Williams has reported improvement and a lower mortality from its use in cases of obstruction. Holt in experimental study has seen no good effects.

The direct effect of a toxin is far from being the only theory advanced to account for the fatal nature of ileus. H. Heuser, in the discussion at Basle, analyses what he calls the humoral syndrome and summarises the various changes in the chemistry of the body fluids that have been found to be associated with intestinal obstruction. Of these the most important are a chloride deficiency in the blood and dehydration of the tissues of the body. The good results obtained by intravenous administration of saline, and more especially of hypertonic saline, are explained first by a replacement of this chloride and fluid, and secondly by the direct effect of sodium chloride as a stimulant of peristalsis. Continuous administration of saline by the drip method is now one of the well-established ways of combating the effects of ileus. Loss of a considerable volume of circulating blood into the splanchnic area is another well-attested cause of the circulatory failure Holt[3] is of the opinion that in strangulation of a large loop of intestine this trapping of blood in the occluded part is sufficient in itself to account for death without any toxæmic factor. Th. Naegeli, in the discussion at Basle, considers that the distension of the intestinal wall associated with the meteorism of ileus has a bad effect on the portal circulation: Not only is the action of the intestine as the auxillary heart of the portal circulation lost, but there is a bleeding into the splanchnic vessels. The function of the liver is thus depressed at the same time as it is being flooded with any toxins produced in the intestine American writers have been more concerned with the mechanical effects on intestinal motility and absorption, of the distension with fluid and gas. Bartlett distinguishes[4] between the peristalsis of the gut and the tonus of its muscular wall The loss of tonus he believes to be of much later occurrence than the loss of peristalsis. By keeping the intestinal canal above the occlusion continuously empty, both of its fluid and gaseous contents, he aims at preserving this tonus; the chances of recovery of peristalsis are then good He uses continuous positive suction through a tube in the stomach as described[5] by Wangensteen and Paine, but he has further elaborated the method to allow of a constant check being kept on the fluid intake and output. While peristalsis is at a standstill fluid excretion from the intestine is greater than absorption; when recovery has commenced, fluid starts to downwards through the pylorus and to be absorbed by the intestine. This is shown by a decrease in the drainage from the gastric tube. During the whole course of the treatment fluid is given by the mouth as well as by the intravenous route The method has given good results in cases of obstruction without strangulation. The difficulty when strangulation cannot with certainty excluded. Post-operative ileus, which in Bartlett's experience is always due to peritonitis, is the main indication. Vomiting and meteorism, the two most distressing symptoms from the patient's point of view, are said to be successfully combated. Naegeli has studied the intestinal movement in cases of experimental obstruction in animals by screening under X ray after the administration of an opaque meal The regurgitation he as being an active process, and not just an overflow from the distended bowel. Heusser on the other hand looks on it as an overflow; he has found meteorism to be much more marked in the paralytic type of ileus than in primary occlusion of the gut. It can without doubt produce the most pro- distress Naegeli quotes Rost as drawing attention to the two contrasting forms of ileus found in the two types of animal which have been most used in the experimental work—viz, rabbits and dogs. In rabbits it seems that the symptoms of ileus are mainly disturbance of intestinal movement and of the nervous system; in dogs the chemical changes in the body fluids are the chief feature In man the syndrome is a combination of both.

Early diagnosis is essential if treatment is to have any reasonable chance of success The possibility of intestinal obstruction should be in the surgeon's mind long before the diagnosis is settled by the typical symptoms. This is eusser calls making a diagnosis on the minimal ndrome A sudden acute attack of severe licky pain in a patient previously well, accom-nied by vomiting, distension, and localised dominal resistance, which becomes more obvious ring the intensity of the pain, does not mean that testinal obstruction should be considered but at, in Heusser's words, it should be diagnosed t of hand The suspicion should arise when ly *one of the cardinal symptoms* is present If ralytic ileus is diagnosed, it must not be forgotten at the distended loops may so coil and kink one another as to produce a superimposed echanical obstruction The early relief of post-erative meteorism is thus further emphasised.

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[1] Williams, B. W.: Brit Jour Surg, 1926, xiv., 295.
[2] Holt, R L · THE LANCET, 1934, i., 724.
[3] Idem: Brit. Jour. Surg., April, 1934.
[4] Bartlett, Willard. Amer. Jour. Surg, March, 1934, p
[5] Wangensteen, O. H, and Paine, J. R: See THE LANCET, 1933, ii., 1432.

THE RELATIONSHIP BETWEEN HUMAN AND ANIMAL DISEASES

In an address which was given recently at ellington, New Zealand, by the Governor-neral, Lord **Bledisloe**, when opening the nnual Conference of the New Zealand Veterinary sociation, special attention was drawn to the ationship between certain human and animal seases After remarking upon the wonderful mate of New Zealand as an aid to the rearing of m stock, His Excellency dwelt upon the success modern veterinary science in the prevention of idemics and the cure of disease amongst animals, awing special attention to bovine tuberculosis, *nders, rabies, anthrax, cow-pox,* and undulant ver, which are known definitely to be commu-cable from animals to man Once any of these seases are eradicated it should be a comparatively y matter both for New Zealand and Great itain, being island countries, to keep themselves e by efficient quarantine

Take as typical examples glanders of the rse and rabies of the dog, both now non istent in Great Britain It is to the terinarian that the nation is indebted for the adication of glanders of which there has been case in Great Britain for the past six years, d the only places where the lesions of glanders n now be studied are in the laboratories and useums of our veterinary colleges and hospitals horses and ponies, whether they are luxury mes such as hunters and racers, or working llery ponies, have to be submitted to the mallein t before they are allowed to enter either country milarly with rabies, a most dreaded disease in gland some 30 to 40 years ago, it is now mpletely eradicated and its reintroduction is ng carefully guarded against by the six months' arantine regulation which is imposed on all ported dogs and cats by the Veterinary Depart-nt of the Ministry of Agriculture New Zealand, e Great Britain, is free of these two dangerous eases, and the human patients of the doctor o a very deep debt of gratitude to Veterinary ence on this account Pre-eminently a cattle-ring country, New Zealand has some very fine ry herds, and diseases such as tuberculosis d mastitis are a great anxiety to New Zealand authorities, not only in regard to the ailments which the affected animals can, under certain conditions, pass on to man, but also on account of the great economic loss caused to the owners of the herds In connexion with the economic significance of disease to the dairying industry, Lord **Bledisloe** referred in his address to the damage which is produced by the high proportion of sterility, contagious abortion, and mammitis, estimating that the monetary loss from these three diseases in New Zealand alone amounts to between two and two and a half million pounds annually, and that, in addition, one group of the deficiency diseases of sheep was estimated to account for the death of probably 200,000 lambs each year

Lord **Bledisloe**, whilst paying full tribute to what is being done by veterinary science for agriculture in regard to the eradication of animal diseases, drew attention to the need for further financial help in order that more research may be carried out, and one can only hope that he will use the influence which is at present at his command to assist in finding ways and means to supply the wherewithal for these researches There is no veterinary teaching college in New Zealand, and all qualified veterinary surgeons have to possess a British diploma, but the shortage of members of the veterinary profession will not be remedied until, as far as New Zealand is concerned, the salaries offered are equal at least in amount to those which graduates can readily obtain in this country, and are accompanied by similar prospects The shortage of qualified men in the veterinary profession in Great Britain at the present time is ominous There is difficulty in filling up the advertised positions for the inspection of milk and dairy cows The relationship between the diseases of man and animals is a matter in which close collaboration between Great Britain and New Zealand might be of great assistance, the two professions and the presiding authorities in each country working together Such a fusion of interests would assist in the most practical way in dealing effectively with those which are definitely human or suspected to be intercommunicable

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The Medical Research Council have appointed Mr F J Marquis, JP, BSc and Prof W W Jameson, MD, FRCP, to fill vacancies in the membership of their Industrial Health Research Board Mr Marquis, who is joint managing director of Lewis's Ltd, is chairman of the Liverpool Medical Research Association and a member of the advisory council to the Post Office

The first Dixon memorial lecture will be given by Sir Henry Dale FRS in the Barnes Hall of the Royal Society of Medicine on Tuesday, Dec 11th at 5 PM Prof W E Dixon, who died in August 1931, was recognised as a leader of academic pharmacology in this country and the fund collected by a group of his associates and pupils under the chairmanship of Sir William Willcox was handed to the Royal Society of Medicine to establish in his memory a lectureship in therapeutics and pharmacology The subject of Sir Henry Dale's address will be Pharmacology and Nerve-endings

ANNOTATIONS

DIET AND WORK

THERE is a firmly rooted belief, not supported by much scientific evidence, that large amounts of meat should be taken when training for a feat of endurance Some interesting experiments have recently been made at the Glasgow Institute of Physiology [1] on the output of a racing cyclist on five vegetarian diets of approximately equal calorific value but varying protein content This man rode a bicycle ergometer for eight hours on each diet; the amount of work of which he was capable (together with other details of his performance) being measured and compared with his total energy output The proportion of the latter appearing as work gave his efficiency. Three of the diets were respectively of low, medium, and high protein content, the fourth was similar to the high protein diet, but the protein was of vegetable instead of animal origin, eggs, milk, and cheese being excluded; the fifth, chosen by the cyclist himself, approximated to the original high protein diet, and was consumed in small amounts at frequent intervals As a result of these experiments Dr G M Wishart found that the total amount of work performed during the day was greater on the high protein diet, greater still on the subject's own diet, but that the gross efficiency was actually less than on the protein poor diets—i e, there was a proportionately larger amount of energy dissipated as heat. The experiment in which vegetable protein alone was used had to be abandoned on account of abdominal discomfort From the point of view of performance, therefore, the use of food containing a high proportion of protein is justified; so far as conclusions can be drawn from a limited number of experiments, vegetable protein is inferior, probably on account of its bulk. The significance of this last factor is suggested by the better performance when food was taken often and in small quantities Investigation of the excreta by Prof H. E C Wilson failed to provide any rational explanation of the facts recorded. The nitrogen output was related to the amount of protein ingested rather than to the amount of work done. There was nothing to suggest that the value of protein lay in its capacity for repairing "wear and tear" of the tissues. In another paper in the same issue (p. 207) Dr. R C. Garry and Dr G. M Wishart work out the efficiency of bicycle pedalling at different speeds by comparing the actual work done (1) with the total energy expenditure, (2) with the total energy expenditure minus the work required to perform similar movements with no load on the bicycle The first of these measurements gives the gross efficiency, the second the net efficiency The former was found to be less at high speeds and the latter more The total energy expenditure and the total amount of external work done were both constantly greater in the trained subject than in the untrained, while the cost of the "no-load" movement was less

THE SURGICAL RELIEF OF PAIN

Two recent papers refer to the use of alcohol injections for relieving intractable pain F de Beule and A Schotte [2] write on epidural and paravertebral injection, the first of which, by way of the sacrococcygeal foramen, is recommended for the pain of inoperable or recurrent carcinoma of the cervix or rectum. The technique is simple and, if a local anæsthetic is first introduced, it should not hurt the patient Often relief is complete; sometimes only partial, rarely there is none When the ment is only partly successful it should be rep after a few days' interval Paravertebral injecti alcohol is advised for obstinate intercostal especially of herpetic origin; and into the solar p when this is involved in malignant growths upper abdomen Sympathectomy or, as a last re chordotomy is reserved for cases in which al injection fails. The latter operation has now superseded for the most part by milder m for it is a severe one and its results are not satisfactory It may be remembered that in series of 17 cases reported in our columns by G. Stebbing [3] there were two deaths and several of incomplete relief and recurrence of pain E. Stern [4] has obtained good results from injections of 95 per cent alcohol, and states that scrupulous attention to technique the method describes is safe and usually successful It causes partial anæsthesia, but he has never motor paralysis The effect of a single injection last for as long as eight months. The 19 cases of c he records received a total of 26 injections, i relief was complete, in the others it was cor De Beule and Schotte have also had good results intraspinal injections, but in their hands pa has occasionally followed. Retention of urine f few days, due to sensory paralysis of the v may be a sequel to alcohol injection by any and also to chordotomy.

A FOURTH MALARIAL PARASITE?

THREE parasites of malaria are commonly re —viz., *Plasmodium malariæ* of quartan, *P.* vi tertian, and *P. falciparum* (in Germany *immaculatum*) of malignant tertian fever; b Prof. P. Mühlens mentions in a recent paper [5] have been observed and named. He quotes Emin's *P vivax,* var *minutum* (1914), J. W Stephens's *P. tenue* (1914), Marzinowsky's *P* *sicum* (1916), von Ziemann's *Laverania pern* (1917), and finally Stephens's *P. ovale* (1922). last named reported first by Stephens from Africa has been since observed in 1927 by St and D. U. Owen from Nigeria, by W. and Owen from Nigeria (1930). From another of Yorke's, found in the Belgian Congo, S. P. J W. D. Nicol, and P. G. Shute infected *Ano* *maculipennis* (the oöcysts in its stomach were tinguishable from those of the other parasites) from these mosquitoes men were infected and in blood the *P. ovale* was again seen In 1933 Sc and his helpers, also Rodhain, reported it from Belgian Congo, and in the same year N. H. Fa from West Africa and P. H Manson-Bahr f Uganda *P. ovale* has thus been reported eight t in 12 years During a course in the tropical school at Hamburg last autumn, Dr. Mühlens director, chanced upon a case that was being st to the class as clinically tertian, but which examination of the thick drop was regarded as qu though the parasites were not quite typical, Schü dots being well marked In the smears how the parasites seemed rather to resemble *P.* being small, compact, early dividing, never more than eight merozoites, almost always in enl red corpuscles, themselves showing marked Schü dots There was notably little pigment, and the edges of the infected corpuscles were irregular and fringed Dr. Shute, who was on a visit to Hamburg, recognised them as *P ovale*, at his request preparations of Yorke's parasite were sent for comparison and found to be identical This Hamburg patient came from West Africa—in his ship were other malarial cases, three malignant tertian, one quartan—his fever was thought to be tertian, and as in other *ovale* cases, it was noticed that his pyrexial attacks came on in the evening or at night He reacted at once to atebrin, was free of parasites in three days, and when re-examined after five months was found to have been quite fever free in the interval Attention having been directed to this case, three others were discovered, two from Nigeria during treatment, one from the west coast of South America, clinically supposed to be a double tertian Dr Mühlens is satisfied that the parasite seen at Hamburg is that reported and named by Stephens Whether or not it is a fourth parasite of malaria *he has* not quite made up his mind, though he inclines to believe that it is a form intermediate between *P malariæ* and *P vivax* The oval enlarged red corpuscles in which it occurs are never associated with ordinary tertian infections The paper is well illustrated with microphotographs and coloured drawings

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[1] Jour of Physiol, 1934, lxxxii, 184

[2] Rev. belge des sci méd, 1934, vi, 357.

[3] THE LANCET, 1929, i, 654

[4] Amer Jour Surg, 1934, xxv, 217

[5] Arch. f. Schiffs- u. Tropen -Hyg, September, 1934, p.

TRACHEOTOMY IN LARYNGEAL TUBERCULOSIS

FROM time to time it has been suggested that tracheotomy should be useful in the treatment of tuberculosis of the larynx as a means of obtaining rest for the organ, but almost all authorities agree in condemning its employment for this purpose StClair Thomson[1] states that strict silence will secure almost as complete rest, while *Harold Barwell*[2] says that it does not give rest to the parts but prevents effective coughing, allows secretions to accumulate, and generally does harm They agree however, that tracheotomy is necessary in the presence of dyspnœa, which cannot be relieved by rest silence, and intralaryngeal treatment, Thomson urging that there should be no hesitation in performing it in these circumstances Four cases reported *by F C* Ormerod[3] support these conclusions Of these, the pulmonary conditions were quiescent in two, and they showed no constitutional disturbance after the operation, the third, with active disease in the lungs, had fever to 100° F for two days but made a good recovery and lived for nearly two years *The* fourth patient had very active pulmonary disease, in her case this was much accelerated after tracheotomy, and she died in three weeks He agrees that any resulting improvement in the larynx is very slight and not enough to justify tracheotomy for therapeutic reasons, and states that the operation, although apparently safe where the disease is quiescent, will be attended by great risks if there are active pulmonary lesions In Ormerod's view tracheotomy should be done only for severe dyspnœa and only after every effort has been made to relieve it by means of rest and other measures On the other hand, dyspnœa is extremely exhausting and patients often improve remarkably in health after tracheotomy when the operation has been definitely called for It is especially indicated when laryngeal stenosis accompanies the more chronic forms of phthisis, but it is doubtful if it should be reserved only for cases where dyspnœa is really severe it is possible to make the criticism that Ormerod's fourth patient, who suffered from severe dyspnœa for ten days before tracheotomy, might have done better had the operation been performed sooner

TREATMENT OF MIGRAINE WITH ERGOTAMINE TARTRATE

IN 1928 we gave an account[1] of Dr Arnault Tzanck's observations of the treatment of migraine with ergotamine tartrate Since then Dr Tzanck has published further communications on this subject and this mode of treatment has been investigated by other workers also Dr W G Lennox[2] has recently published the results of treatment of 45 patients Ergotamine tartrate which is sold here under the trade name of Femergin is supplied in ampoules containing 0 5 or 0 25 mg and in tablets containing 1·0 mg The recommended single dose is 0 5 mg subcutaneously *or 1·0 mg by the mouth*, but because *patients vary* in their reaction to the drug Dr Lennox considers it wise to give only half the full subcutaneous dose at the first trial The dose can be repeated after an interval of two or three hours For a prompt, sustained effect he prefers 0 5 c cm (0 25 mg) intravenously and at the same time the same amount subcutaneously The injection usually causes vomiting, increase in systolic blood pressure, decrease in pulse pressure, and bradycardia. Three patients complained of dyspnœa and a sense of constriction in the chest, and one of these had symptoms of angina In the majority of cases nausea or vomiting occurred Experience shows that ergotamine tartrate is in most cases effective in cutting short the individual attack Abrupt termination of the initial attack treated occurred in 40 of the 45 of Dr Lennox's patients Relief of the headache began in 15 to 30 minutes after an intravenous dose, in 1 to 2 hours after a subcutaneous dose and in 2 to 3 hours when the drug was given orally Whether ergotamine will lead to permanent improvement remains doubtful Dr Lennox states that patients whose attacks are terminated when treatment is first instituted may later fail at times to obtain relief, or else the interval between attacks *may be shortened* Although *some* authors speak hopefully of a diminution in frequency and of the actual disappearance of the attacks under treatment with ergotamine, Dr Lennox's experience is less encouraging in this respect and he doubts whether it is of value in preventing the attacks Drs Samuel Brock, Mary O'Sullivan, and David Young[3] report an experience similar to that of Dr Lennox, though with a smaller series of patients In most cases the injection of 0 25 to 0 5 mg of ergotamine tartrate caused the headache to disappear in 1 to 3 hours. These workers state that at times the taking of 1 mg two to four times a day by mouth lessened the frequency and severity of the attacks Drs A H Logan and E V Allen[4] have treated nine sufferers from migraine with ergotamine tartrate for 71 headaches 67 of which were relieved in a more or less satisfactory manner In three of the four instances in which relief was not experienced the medicine had been given by mouth These authors draw attention to the very disagreeable symptoms which followed the injections in some instances, but which could usually be avoided by using the smallest amount of the drug which would relieve the headache although some patients may be so [illegible] to it that they are unable to use it at all. Dr. Lennox points out that the drug should be used with caution for patients with cardiovascular disease. Pregnancy is a contra-indication and prolonged administration may carry with it the risk of ergotism. While it is useful to know of a drug which can be relied upon in most cases to cut short an attack of migraine, it is doubtful whether so potent an agent as ergotamine tartrate should be used at frequent intervals or put into the hands of patients. It may perhaps prove of value for emergency uses, for example to cut short an exceptionally severe attack or one which occurs at a particularly inconvenient time.

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[1] Thomson, Sir StClair Diseases of the Nose and Throat [illegible] London 1926 [illegible]

[2] Barwell, H S Diseases of the Larynx 3rd ed London 1923 [illegible]

[3] Jour Laryng l. and Otol., August 1934 p 412

[1] The Lancet 1928 [illegible]

[2] New Eng Jour Med., 1934 [illegible]

[3] Amer Jour Med Sci., August 1934 p 335

[4] Proc Staff Meet Mayo Clinic 1934 [illegible]

The value of ergotamine tartrate in cutting short an attack of migraine may throw some light on the pathogenesis of this disorder. The drug was first used because it was believed to depress the sympathetic nervous system, but this effect is complicated by its stimulation of the contraction of smooth muscle. One of Dr. Lennox's patients had already had a bilateral sympathectomy (presumably cervical) which had not relieved his headaches Ergotamine nevertheless aborted each attack There is little evidence that overaction of the sympathetic plays an important part in the ætiology of the migrainous headache and it is probable that the benefit derived from ergotamine is due to its effect upon the smooth muscle of the cerebral blood-vessels. G. W. Pickering and W. Hess[5] have shown that the headache induced by histamine appears to be due to stretching of the walls of the cerebral arteries or the tissue in their immediate neighbourhood. If the same explanation holds good for the migrainous headache, it is likely that ergotamine abolishes the pain by increasing the tone of the cerebral vessels and hence diminishing their stretch.

THE PHYSIOLOGY OF OLD AGE

MUCH has been written or spoken lately about the treatment of aged patients and some of the opinions expressed were reviewed in these columns on Sept. 8th. In a post-graduate lecture on the subject, which we published on Oct. 13th, Dr Douglas Firth further emphasised the importance of keeping up the patient's spirits; he must have enough sleep, but should be put to bed for no other reason unless absolutely necessary If an old person has to be kept in bed special attention should be paid in nursing to the skin and gastro-intestinal tract, for experience teaches us to expect deficient circulation in the skin, diminished intestinal secretions and movements, and other degenerative changes, particularly in the cardiovascular system, even where there is no evidence of definite disease Reserve power is generally assumed to be lacking, so that aged patients should be advised, as Dr. H. C Colman put it, to "treat themselves as they would a favourite old horse, and after a good day's work give it two days in the stable" A paper by Dr G. Benedict and Dr H. G Root[6] of Boston, Mass, approaches the problem from a different angle, and asks what the physiological characteristics of old age really are, can any measurements be made which will demonstrate this falling-off of function? The subject they chose for their experiments was a man 91 years of age, whose "alert carriage, energetic movements, intellectual keenness, forceful and well-modulated speech, and neat personal appearance . . . presented the exact antithesis to the picture of senility and incapacity for physical and mental effort so general with nonagenarians". From their acco he was by no means typical of old age, although did not stand alone, two better-known personalit in full possession of their faculties being cited in shape of Dr. W. W. Keen of Philadelphia at 89, Sir James Crichton Browne, now 94 Benedict a Root examined their own veteran in every conceiv way. His skin was of normal texture, he had teeth and a good digestion, and his diet was particularly light, he had little evidence of arter sclerosis, and only an occasional extrasyst his blood count was normal, and chemical examinati of the blood and urine failed to show anything unu Reports from specialists on the sex glands, nerv system, special senses, pharynx, and larynx likew produced nothing out of the ordinary, although sl impairment is obvious in several particulars advantage of choosing such an unusually w preserved subject as this lies in the fact that if gross departure from the normal is detected, assumption may be made that such an abnorma is a characteristic of physiological old age, and h no pathological significance The only measurem which showed much difference from normal was th basal metabolic rate; this was 30 per cent bel the average for men of the same weight and heig In this particular person, then, the engines we definitely slowing down, but there was no breakdo of any part of the mechanism, this was attrib to a good family history, a life of moderation and restraint, and a serene and untroubled mental outlo Given these advantages, any of us may hope to the age of the Biblical patriarchs, and finally integrate like the "one-hoss-shay" of Oliver Wen Holmes, which

> "went to pieces all at once,
> All at once, and nothing first,
> Just like bubbles when they burst"

CYCLOPROPANE AND DIALURETHANE

A REPORT on a substantial number of operati under cyclopropane is now available, and c the good opinion already earned by this, the gaseous anæsthetic The report[1] covers administrations in the course of a year's work at the Wisconsin General Hospital The car dioxide absorption technique was employed, but estimate is given of the average amount of cyc propane needed per case This is unfortunate the cost of the gas still seems to be a formid obstacle to its wide employment Otherwise W and Schmidt's paper contains much valuable infor tion, both clinical and physiological The sup obtained was pure and remained so for 12 mon in the steel cylinders provided There was at difficulty in avoiding leakage, valves which effective against nitrous oxide and ethylene be imperfect in storing cyclopropane. The gas is diffus through rubber, as indeed are nitrous oxide ethylene It is a potent anæsthetic, and narcos be obtained with as little as 4 per cent The strength needed for abdominal operations was per cent, and as respiratory arrest requires over per cent. there is a good margin of safety. W and Schmidt advise that if preliminary medicat is used at all the dosage of any opium derivative sh be half what would be given before nitrous ox The main danger signals during anæsthesia slowing or acceleration of the pulse, neither p nor colour are guides (The colour of course is alw pink because of the high proportion of ox onstantly administered) Danger is always to be et by reducing the percentage of cyclopropane

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[5] Brit Med. Jour, 1932, ii, 1097

[6] New England Jour Med, Sept 20th, 1934, p 521

[1] Waters, R M, and Schmidt, E R Jour Amer Assoc, Sept 29th, 1934, p 975

Dialurethane given by intravenous injection for bstetrical analgesia is extolled by Porter Brown[2] s safe and effective Restlessness, so common after he other barbiturates, has hardly appeared at all n his experience The injection is made slowly and opped when the patient ceases to answer questions, enerally this is after about 2 c cm had been put nto the vein If sound sleep between pains does not ppear another injection is made after half an hour ore than 4 c cm is never injected at a time, and ore than 8 c cm was never used in the course of labour Brown writes after employing dialurethane n 50 cases, and another series of 110 has been escribed, with an equal absence of undesirable ymptoms

PREVENTION OF ASCARIS INFECTION

INFECTION with ascaris is extremely common in the ropics and far from negligible in temperate climes, t Col Clayton Lane's critical review[3] will therefore terest the growing number of medical men and others ho are advocating practical measures of sanitation rural areas The author questions the truth of any accepted ideas about ascaris infection The idence of the material before him, which includes e great majority of recent important papers on the ubject, appears to him to contradict present day aching on several points, one of these is the route infection, another is the capacity of the pig to act a reservoir of infection for man Fertile ascaris ggs passed with human fæces are not infective to nother human being until, after a period of several many weeks (depending on temperature), an active nbryo worm has developed inside the shell Such pe eggs have long been known to produce infection swallowed, and it was assumed that, the shell aving been dissolved or ruptured in the digestive ices, the larva emerged and grew to maturity in the ut F H Stewart's experiments however proved at when small animals were fed on ripe ascaris eggs e larvæ reached the lungs Since then it has been nerally accepted and taught that the larvæ from the ng alveoli are carried up the bronchi by ciliary tion to the epiglottis and again swallowed, thus me to reach maturity in the intestine In various calities preventive measures based on this conception the life history have been undertaken including the stallation of pit privies, these methods of disposal ing judged adequate to prevent contamination of od and water with ripe eggs Clayton Lane points t that in certain places where such latrines have en installed the ascaris infection rate in the population has risen instead of falling as anticipated, he so gives examples of places in which in spite of isting methods of disposal being likely to reduce fection by ingestion of eggs, the infection remains gh

Nearly fifteen years ago Clayton Lane suggested rial convection in dust of dry ripe eggs as a possible ethod of spread, if the eggs reached the nasal ucosa and hatched on the moist surface the larva ight enter the circulation and reach the lung without o necessity for passing the barrier of the liver nce the inhalation method would seem to explain any of the anomalies observed he suggests experimental investigation of its possibilities Regarding e identity of the ascaris of man and the pig the thor discusses critically the evidence upon which a ological difference is claimed by some, he draws attention to the singular lack of success achieved in infecting pigs with the ascaris proper to the pig, which discounts any lack of success in infecting pigs with ascaris of human origin It suggests that the natural route for infection was not selected in the experiments, and here the inhalation method is again put forward as possibly the correct one, until experiments of a more convincing and positive kind are done the pig should remain suspect Clayton Lane concludes that the prevention of ascaris infection does not lie in the installation of pit privies The possibilities of decomposition in the septic tank privy and of heat in the Beccari process are mentioned, while sewered privies, cleanly kept, are sure safeguards, he points out that to devise privies of demonstrable effectiveness and inoffensiveness and provide them for the poverty stricken millions of rural dwellers is a large task, he urges the necessity for more work on the conveyance and means of prevention of ascaris infection

The author's review will repay the attention of workers on the biological side, and of all who are engaged in attempts at rural sanitation in areas where ascaris infection is a factor of importance In view of the rapid extension of the use of the bore hole latrine it would be valuable to have a continuous record over a period of years, comparing the results in pairs of villages with equal incidence of ascaris, after one has been equipped with bore hole latrines the other being left as control

CHRONIC MANGANESE POISONING

MANGANESE poisoning is fortunately rare in this country, though last month the incidence of several cases was reported by Dr Donald Owen and Prof Henry Cohen[1] The clinical features of this form of poisoning were summarised in 1919 by Edsall, Wilbur and Drinker,[2] who had an opportunity of examining a larger series of cases than has been available to other investigators The symptoms are said to present themselves in a characteristic way, the diagnosis being very easy if the observer is alive to their possible significance Edsall and his collaborator record their findings in the common order of appearance as follows noting that a history of work in manganese dust for at least three months is the rule The patients first complain of languor and sleepiness, and develop stolid, mask like facies and a low monotonous voice, speech being laconic Muscular twitching, varying in degree from a fine tremor of the hands to gross rhythmical movements of the arms, legs trunk, and head then appear, with cramps in the calves and a complaint of stiffness in the muscles of the legs, the cramps usually coming on at night and being worse after a day of exertion A slight increase in tendon reflexes is noticeable with ankle and patellar clonus By stretching any of the muscles of the body it is often possible to elicit rhythmical contractions, Romberg's sign is inconstant and there is no incoördination Retropulsion and propulsion and a peculiar slapping gait are characteristic late changes, occasionally emotional manifestations such as uncontrollable laughter or less frequently, crying No disturbances of sensation or eye changes are to be observed and no reactions of degeneration; rectal, genito urinary or gastro intestinal functions are normal and so are blood, urine and cerebro spinal fluid It is significant that unlike lead manganese produces no life shortening degenerations—seriously poisoned men are long lived [illegible]

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[2] Brown I Surg Gyn, and Obst, October 1934 p 672

[3] Trop Dis Bull 1934 xxxi [illegible]

[1] See THE LANCET, Nov 3rd, [illegible]

[2] Jour Indust Hyg 1919 [illegible]

Edsall, Wilbur, and Drinker conclude that "the metal apparently makes a very definite attack upon some non-vital portion of the neuromuscular system, destroys it thoroughly, if time for action is permitted, and leaves the victim quite well in every other respect." The essential and characteristic lesion common to victims of poisoning and to laboratory animals is destruction of the ganglion cells of the basal ganglia, followed by gross scarring and shrinkage Microscopic examination shows the gliosis to be more or less evenly distributed between the thalamus and the caudate and lenticular nuclei In a recent communication Canavan, Cobb, and Drinker[3] give an exhaustive account of the autopsy findings, notably the histopathology, in a case of a man of 69 who died of cardio-renal disease 14 years after the onset of symptoms due to manganese poisoning

They draw attention to the fact that manganese is evidently not a highly poisonous element, it does not accumulate in the body, and reduction of dust in the air breathed by workers appears to check the incidence of cases of poisoning. Unfortunately, however, patients with a well-developed syndrome of manganese poisoning make but little recovery when removed from poisonous surroundings They suffer no serious general impairment, but live for years as healthy but more or less helpless invalids According to Alice Hamilton[4] the cause is always the inhalation of dust of manganese ore, or dioxide, or the fumes from the fusing of the manganese in steel manufacture Manganese plays a part in various industries, but a very large proportion of the world's production of manganese ores, manganiferous iron-ores and manganiferous zinc residuum is consumed in metallurgical processes, particularly in the manufacture of iron and steel

This form of poisoning demands attention from the neurologist, because the clinical picture, consequent upon lesions of the basal ganglia, closely resembles that of the commoner causes of the Parkinsonian syndrome. Enquiry into the occupations of all Parkinsonian sufferers might well indicate that some cases suspected as being post-encephalitic or arterio-sclerotic in origin are really due to manganese poisoning.

THE CONTROL OF SYPHILIS

THE trend of medicine is nowadays towards prevention rather than cure, but Wile[5] points out that from the economic point of view it is almost as important to prevent the serious late effects of a disease as to prevent its onset. Because of its peculiar method of infection attempts to prevent syphilis have not been altogether successful, but if the subject is properly approached it should be possible by modern methods to prevent the devastating sequels Among the worst of these are neurosyphilis, cardiovascular syphilis, and transmission of infection to the next generation After 25 years' experience Wile has come to the conclusion that the vast majority in these three groups are preventable For example, he believes that adequately treated cases never develop cardiovascular syphilis Routine lumbar puncture during the first year of infection and treatment will show definite changes in the cerebro-spinal fluid which indicate future nervous trouble, and tryparsamide, intraspinal. and (most valuable of all) malarial therapy can easily be instituted, with happy results Where the profession is most open to criticism is in regard to conge syphilis, for this is absolutely and completely ventable By the vigorous treatment of a syph woman during her pregnancy, especially in the months, one can guarantee that the child will be not only alive but free from those ghastly herit interstitial keratitis and nervous lesions, wh cause so much unnecessary suffering. The obst to the eradication of this disease is the fact th many women show little in their early infecti The primary sore may not be visible, the second phase may be transient, and then the stage is for a series of miscarriages and congenital child Perhaps the only way to get rid of this disease wo be to do a routine Wassermann test on all expe mothers in the first two months of pregnancy, a institute treatment as early as possible wherever is found necessary.

THE ROYAL SOCIETY

THIS year the Royal and other medals have b awarded as follows:—

The Copley Medal to Prof J S Haldane for his d coveries in human physiology as applied to medic mining, diving, and engineering

The Rumford Medal to Prof W J de Haas for researches on the properties of bodies at low t

A Royal Medal to Prof. S Chapman for his re earch in the kinetic theory of gases, in terrestrial m and in the phenomena of the upper atmosphere

A Royal Medal to Prof. E D Adrian for his the physiology of nerve and its application to the of sensation

The Davy Medal to Prof. W N Haworth for researches on the molecular structure of carbohydrate

The Darwin Medal to Prof. A C Seward in recogn of his work as a palæobotanist

The Sylvester Medal to Earl Russell for his guished work on the foundations of mathematics.

The Hughes Medal to Prof. K M G Siegbahn in re nition of his work on long-wave X rays

The following names have been put forward election as officers and council for the ensuing y

President, Sir Frederick Gowland Hopkins, F.R.C treasurer, Sir Henry Lyons, secretaries, Sir Henry D M D, and Sir Frank Smith, foreign secretary, Prof A Seward Other members of council. Prof E D M-D, Dr. E J. Butler, Mr W T. Calman, D Sc, Mr Chapman, Prof. A W. Conway, Prof W H E Prof T. R Elliott, M D, Dr P P Laidlaw, Sir G Lennox-Conyngham, Prof J C McLennan, Mr F H Marshall, Sc.D, Sir Charles Martin, F R C P, Prof G Morgan, Prof R Robison, Mr. Herbert H Thomas, S and Prof E T Whittaker

A DINNER will be held on Tuesday, Nov under the auspices of the Chairman (Mr Ber Cuddon) and the Committee of the Hospital Epilepsy and Paralysis to commemorate the ju of the first operation for the removal of a tumour f the brain Lord Horder will take the chair operation was performed by Sir Rickman Go on Nov. 25th, 1884, and a description of the case an Godlee's procedure was published in THE LA of Dec. 20th, 1884 On the afternoon of the same a paper will be read by Mr Wilfred Trotter, F entitled A Landmark in Neurology, at the R Society of Medicine.

ROYAL VICTORIA HOSPITAL, FOLKESTONE.—T capacity of this hospital is so heavily taxed that 98 beds should be increased to 150 This extension cost between £20,000 and £30,000 Private ward maternity section, a pathological department, a children's ward will also be added.

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[3] Arch Neur and Psychiatry, 1934, xxxii, 501

[4] Hamilton, A, Industrial Toxicology, 1934 New York and London P 93

[5] Wile, Udo J., Jour Amer Med. Assoc, Sept. 1st, 1934, p 648.

PROGNOSIS

A Series of Signed Articles contributed by invitation

XVI.—PROGNOSIS IN ANGINA PECTORIS

BEFORE attempting to make a prognosis in a case f angina pectoris we must endeavour to ascertain e cause of the patient's anginal pain, and particurly whether or not it is due to organic disease We ust remember that physical signs may not help us ere, and that angina pectoris ending in death may ccur without any physical signs of organic disease he elucidation and interpretation of the patient's ymptoms will often give more valuable information an will a thorough physical examination It may e helpful to summarise briefly the essential features f angina due to coronary disease as contrasted with ose of the functional types of angina

DIFFERENTIAL DIAGNOSIS BETWEEN ORGANIC AND FUNCTIONAL TYPES

The pain of *angina due to coronary disease* is usually ernal, spreading across between the nipples It ay or may not radiate down one or both arms more ommonly the left, sometimes it radiates up the eck and along the jaws Far less frequently is rganic anginal pain left supramammary in origin, nd very rarely, if ever, is it apical Coronary anginal ain is induced by effort and disappears quickly hen effort ceases, it may be induced by emotion r by recumbency at night ("angina of decubitus"), ough in such patients a history of angina of effort is lso usually obtainable Coronary angina is rare in omen

Functional anginal pain, on the other hand, is much ore commonly precordial, or apical, rather than ernal, though it may radiate down the arms and up e neck It is far more common in women than in en It is particularly common in women during e climacteric and the sufferer from it often exhibits ymptoms of vasomotor instability, such as flushings, aynaud like phenomena rapid variations in blood ressure, and an irritable heart rate Functional nginal pain is more often brought on by emotion an by effort, and its relationship to effort is extrardinarily capricious—a severe attack being brought n by quite trivial exertion on one day, whereas on nother vigorous physical effort may be undertaken ith impunity In coronary angina, conversely, the lationship of symptoms to degree of effort is remarkbly constant

It is important to remember that the severity of e pain is of very little help in the differential diagosis, for the pain of a functional angina may be cruciating and terrifying, whereas a dangerous ronary angina may be evidenced by no more than brief but disagreeable sense of sternal constriction long history—10 to 15 years—is always suggestive f a functional rather than an organic condition nd so is a story of intermittent anginal attacks with rolonged periods of freedom from symptoms

PROGNOSIS IN FUNCTIONAL ANGINA PECTORIS

Provided always that the diagnosis is certain the rognosis is uniformly good But when there is any oubt as to the diagnosis, the prognosis must be a uarded one It must be remembered that hysterical ymptoms are quite often added to those of an organic ngina, and in such a case diagnosis and prognosis ay be exceedingly difficult As an instance the ollowing case may be cited —

A middle-aged Jew complained to his doctor of sternal iscomfort on effort, he presented no physical signs of organic disease, but his doctor suspected coronary sclerosis, and advised him to curtail his activities In order to persuade him to do so, he found it necessary to warn him that his attacks were not devoid of risk, with the unfortunate result that the patient developed an anxiety state, with air swallowing, noisy belching, floods of tears and what appeared to be an hysterical status anginosus In this condition he consulted a cardiologist, who told him that there was nothing wrong with him and advised him to return to his business and to take up golf He died of a coronary thrombosis a few weeks later

PROGNOSIS IN CORONARY ANGINA PECTORIS

A family history of several early cardiovascular deaths is always an unfavourable feature Conversely, we feel happier about an anginal patient whose forebears were long lived The patient's mentality is almost as important in the prognosis of angina as it is in a case of pulmonary tuberculosis In both of these diseases the man who can face up to the situation with sense and courage has a much better chance than the one who is unable to do this He must be able to steer the difficult course between hypochondriacal invalidism on the one hand and disregard of advice on the other He must find out, helped by his doctor, what his limits are and must live up to, but not beyond them If attacks become less frequent and less severe on such a régime, the outlook is so much the better It is quite possible that such a patient may survive and maintain excellent health for years, and he may even lose his tendency to anginal pain The prognosis in this disease is not nearly so bad as it is usually thought to be by both the laity and the medical profession Curiously enough the prognosis is certainly better in senile angina (age 70 and over) than it is in middle age As has been said before, the fact that attacks are evidenced by very severe pain, and are easily induced, does not necessarily indicate a bad prognosis A sensitive individual, with an unstable vasomotor system, is likely to have more severe attacks on slighter provocation than is a more phlegmatic man An attempt must therefore be made to assess how far the severity of symptoms and their ease of induction is attributable to coronary disease and how far to psychological make up" Angina of decubitus is always an ominous symptom, particularly if it is associated with paroxysmal dyspnœa

A progressive increase in the severity of attacks, and in their ease of induction is suggestive of a rapidly narrowing coronary artery with consequent risk of its sudden complete occlusion possibly with a fatal issue But if the patient survives such a coronary occlusion, and if adequate rest is enjoined upon him for a few months subsequently, he may lose his anginal symptoms and maintain excellent health, within his limits, for some years But even where an anginal patient loses his cardiac symptoms, as not infrequently happens it must be remembered that he runs the risk of death from apoplexy or from uræmia

As to physical signs, cardiac murmurs are of very little importance in the prognosis of coronary angina, though there is still a tendency in the profession to base a prognosis almost entirely on the presence or absence of such a murmur More important are the size of the heart and of the aorta as established by X ray examination The electrocardiogram may yield valuable information especially if serial electrocardiograms give evidence of a progressive myocardial degeneration Alternation of the pulse and gallop rhythm are always unpleasant findings As to the blood pressure, a low pressure is a more unfavourable finding than a high one in angina pectoris, contrary to the usual medical belief

SYPHILITIC ANGINA

It is important always to be alive to the fact that a syphilitic aortitis, with stenosis of the orifices of the coronary arteries, is responsible for a small number of cases of angina, though there is universal agreement that an atherosclerosis of the main trunks, or, more commonly, of the branches, of the coronary arteries is the cause of the bulk of all cases of organic angina. If the orifices of the coronary arteries are stenosed, a collateral circulation cannot be established, as is often the case with atherosclerosis of the coronary arterioles, and this no doubt accounts for the undeniable fact that the prognosis in syphilitic angina is far more serious than it is in the athe sclerotic form. The syphilitic cases seldom sur longer than a year or two.

RHEUMATIC VALVULAR DISEASE

Rarely, typical anginal pain, sometimes of gr severity, may be a feature of rheumatic valvu disease, more commonly with aortic [illegible] than with mitral stenosis In these patients t anginal symptoms are usually more akin to the previously described as characteristic of [illegible] angina than to those of coronary angina. Th patients commonly show evidence of vasomotor stability, and no signs of cardiac failure The pr nosis as to life is excellent, though it may be [illegible] to cure the anginal symptoms.

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Senior Physician to St. Thomas's Hospital

POST-GRADUATE LECTURES

THE series of lectures summarised in our columns during the past five weeks comes to an end with two by Mr. Watkyn-Thomas and Dr. Hunter These were addressed to former students of University College Hospital and the London Hospital respectively.

THE TREATMENT OF DEAFNESS

SOME RECENT WORK

(MR. F. W. WATKYN-THOMAS)

ONCE upon a time there was an unkind person who said that there were two kinds of deafness: one kind was curable, the other kind was not caused by wax. We must confess that although in the last 30 years we have made really remarkable advances in the treatment of surgical diseases of the ear and the intracranial complications we have not been nearly so successful in the alleviation of deafness For this, I think, there have been two reasons. One is that people do not die of deafness, so we have not the opportunity of correlating clinical observation with pathological evidence; the other is that we do not know enough about the physiology of normal hearing to help us with abnormalities of hearing.

We all remember how, in our student days, we tried to understand the ingenious explanations of how sounds are conducted to the nerve-endings of the cochlea, the curvature of the drumhead, and the system of levers by which the ossicles were supposed to do this and that; and we all know how, as practising doctors, we found one weak spot in all this ingenious structure of unjustified hypothesis—just one weak spot . . it didn't work. We all know patients with scarred drums, perforated drums—even no drums at all—who hear quite comfortably; probably we can even think of a few who hear not too badly after a radical mastoid operation, when not only the membrane but the malleus and incus too have been removed

In the last three years a new method of research has given us some really useful clues. Two American investigators—E.G. Wever and C W. Bray—connected up a cat's auditory nerve by an electric circuit with a "pick-up" and a loud-speaker, so that if words were whispered into the cat's ear they were reproduced by the loud speaker in another room By this method it has been possible to test the actual effect of various changes in the middle ear on the conduction of sound

Without going into unnecessary detail, you m remember that the tympanic membrane is attached t the malleus, which articulates with the incus, [illegible] in turn is attached to the stapes The stapes fits i the oval window and pushes on the cochlear flu which in their turn can move a little by [illegible] the membrane of the round window. The chain three ossicles is slung by ligaments and the intratympanic muscles

The first thing we have learnt from these ex ments is that incision, or even removal of the ty membrane has very little effect on the [illegible] of sound.

If the ossicular chain is pulled tight there is a loss low notes

If the chain is loosened there is a loss of high notes

If the pressure of the cochlear fluids is lowered puncture of the round window there is a great loss all sounds.

But if the pressure of the fluids is raised by [illegible] on the round window there is an increase for all

To this we can add one of our few [illegible] proven facts—that if the stapes is fixed in the window by scar tissue or by new bone format there is a great loss for all air-borne sounds

From the experiments it is clear that the tenance of an optimum tension of the cochlear is a basal factor in the conduction of sound, and so normal hearing. Further, it is clear that integrity of the ossicular chain and the mobility of t stapes are two factors of great importance in taining that tension. I am careful to say "great not essential, because people may hear quite although not, I think, perfectly, with a brok ossicular chain, and they can sometimes hear a l with an immobile stapes Of these two factors mobility of the stapes is far the more important

Here then we have something definite with immediate practical application. Whenever a [illegible] gets an acute otitis media his hearing is in [illegible] never because the drum is perforated; very rare fortunately, because the labyrinth is invaded; because the integrity of the ossicular chain is thr ened If we give the chain a fair chance is remarkably resistant. The ossicles are comfort swathed in folds of mucous membrane and ev those two scraggy little muscles, the stapediu the tensor tympani, survive much ill-treatment they become fibrosed or overstretched, but [illegible] chance we must give it So when a drum is bu ith pus we should incise it immediately and drain tank of pus in which the chain is hanging

We have incised the drum, the pain ceases, the nperature falls, the patient recovers, and in spite thus sometimes the ear goes on discharging The e of suppuration may be in the mastoid cells, in the sopharynx, or, perhaps, in the tympanic cavity herever that suppuration is we must try to cure it, her by mastoid drainage, by removal of infected hsils or drainage of an infected sinus, or by local atment of the tympanum

Here I should say something about ionisation I have ver been able to convince myself that ionisation can any good when the mastoid is infected, or when there an ascending infection of the Eustachian tube from the opharynx. And I am not absolutely convinced that results obtained in the other subacute cases are really to the ionisation, I think the thorough and pains ing cleansing of the ear has a good deal to do with excellent results that have been obtained

So much for recent infections We have what ms to me a common sense "How" we should at the cases and "Why" we should treat them in t way We have *now scientific justification for* principles which we have based on practice— ecially for the principle of mastoid drainage for rsistent, symptomless discharge which does *not* me up the Eustachian tube In just the same way can apply principle to practice in the treatment chronic suppurations If we can we must preserve integrity of the ossicular chain, and failing that must do our very best to avoid scarring and rosis around the oval window Therefore, so long there is any useful *hearing* in an ear we *must not* the radical mastoid operation if we can possibly e good drainage by some conservative operation, h as resection of the attic wall—the "epitympano stoid" operation—or even removal of the incus rough a mastoid opening For although as a gical manœuvre the radical is an excellent opera- n, unfortunately it not only destroys the ossicular in but also exposes the inner tympanic wall If mucosa on this wall becomes fibrosed there is a ious chance of the stapes becoming fixed with rly total loss of hearing, and for this reason if I sibly can, I always try to preserve the malleus a bit of tympanic membrane, which at any rate ps the inner wall moist Here our physiologists *re made another point of great practical importance* ey tell us that an increase of pressure at the round dow improves hearing, provided that the stapes mobile For many years we have known that, *etimes, a bit of greased wool packed into a dry* foration or a radical mastoid cavity suddenly *tores the patient's hearing* Now we know how l why it does so, that bit of wool must be com sing the round window, and, as that is the case se nasty septic discs of paper on wire spikes that patients sometimes indulge in can never do any d What they want is a bit of greased wool on right spot

erhaps I am unduly stretching the ossicular chain my argument but I want to mention another kind chronic ear discharge—a discharge that pours up Eustachian tube and has nothing to do with the stoid—the *catarrhe muqueuse* of our French col gues You all know the condition and the lent and the patient's family It is a pale icate child who has a perforation low down and ward in the drum and from this perforation there a continual mucoid discharge Whenever the un tunate child catches cold—and he is always catch cold—the discharge is worse The tonsils are perfectly adequately removed, and follicles grow up from the lingual side, the adenoids are removed and *they grow again, the sinuses* are explored and nothing is found except mucus Worst of all, if someone perpetrates a radical mastoid, a rather deaf child discharging mucopus through a small hole becomes a very deaf child discharging much more mucopus through a large hole Fortunately that does not often happen I think we realise that *surgery is* made for the ear, not the ear for surgery In these cases the danger to life is negligible, and the danger to hearing is not, I believe as great as we expected The integrity of the ossicular chain is not affected, and the changes in the inner tympanic wall are well in front of the windows, so we need not allow ourselves to be unduly hustled by agitated parents and schoolmasters If the tonsils are infected of course they must come out, if a sinus is infected it must be drained, if a pad of adenoids blocks the nasopharynx it must be removed, but our surgery should be confined to what we *must* do

Something can be done by local treatment with antiseptics and astringents (and here zinc ionisation may be really useful), but I believe that in these cases the wet Eustachian tube is just a small part of a wet patient Here, too, we can do something perhaps a vaccine helps one patient, a change of climate another, we can save them from being hardened into skeletons by people who regard extreme cold and discomfort as a panacea for delicate children or from being nursed into premature hypochondriasis by disciples of the other one and seventy jarring sects, but ultimately *it is a problem of chemical structure,* and it is the biochemist who will some day, perhaps, solve the problem for us

The principle of optimum tension of the cochlear fluids applies in the understanding of the whole group of "catarrhal deafness" Here there is a mild chronic infection of and about the Eustachian tube. The lining of the tube *swells and, as the air in the middle* ear cannot be renewed, when it is absorbed the pressure *of the air in the meatus forces in the drum and with* the drum the ossicles The mobility of the chain is hampered, the tension of the cochlear fluids is altered, and the patient is deaf In most cases there is also some exudate in the tube and in many cases there is also exudate in the middle ear The worst of these cases is that at first the deafness is not severe, it fluctuates with the weather or with the patient's colds, *or with his use or abuse of tobacco and only too often* he doesn't bother about it until some permanent change has taken place in the intratympanic structures

The first thing is to relieve the tubal obstruction, and here there has been a change in our technique It is not enough to force air—and perhaps mucus with it—up the tube The tube must first be emptied by suction with a fine intratympanic catheter If there is fluid in the tympanum that must be sucked out too Then we can try dilating the tube with bougies and applying astringents It is a good rule when in doubt to see what one is doing, and for this reason I always use a nasal endoscope in difficult cases It is a humiliating but useful discovery to find out how often a catheter which seems to be in the tube has missed it altogether When the tube has been restored to normal we must "keep it so" We must look for infected sinuses first of all for recent work on the action of the cilia has shown that any discharge from the nasal accessory sinuses is swept over the mouth of the tube Then we must consider infected tonsils and, commonest of all, infected teeth The nasal septum is frequently assaulted unjustifiably, but there are cases where a low spur far back causes a lot of the trouble. Again I would emphasise we must have the absolute conviction of necessity before we embark on any surgery. If I may adapt a phrase from another art there is no worse place than the nose for chop-it-and-chance-it methods

As a rule we draw blank for surgical indications in these cases. Sometimes the pathologist can help us with a suitable vaccine; *the patient often can—by cutting down his tobacco—but as a rule he won't,* except under duress It is a remarkable fact, which you have probably all observed, that none of our patients ever smoke too much Some of these cases are helped by diathermy of the ear and tube; Dr Dan McKenzie has devised a method which seems safe and useful, but it is still too early to speak of it with certainty. I think we may say that the results are promising In some cases cutting down fluid intake and encouraging sweating and diuresis is of value This is based on the work of S. H Mygind and Dida Dederding on Ménière's disease They believe that the underlying cause of Ménière's syndrome and of relapsing Eustachian catarrh is the same—an intracellular œdema of surviving fœtal mucosa This "water-logging" does occur; I have seen many cases in the Copenhagen Clinic, but I do not think it is common in this country Still, excessive fluid intake in patients who do not sweat easily is a thing to guard against.

I have said that if the obstruction and exudation go on long enough unchecked permanent damage may result. This may be overstretching of the tensor *tympani, as is suggested by Lowndes Yates, atrophy* of the tubal and tympanic mucosa, with loss of the ciliary activity which normally empties the tube, possibly fibrosis around the oval window and, perhaps, adhesions between the membrane and the inner wall. For the overstretched muscle Yates suggests putting the ear completely at rest by packing in artificial cerumen and keeping the meatus firmly plugged for some days or even weeks, and this sometimes does good. For the atrophic condition we can do nothing except keep the nasopharynx as healthy as possible and treat the tube with oily applications For the adhesions gentle inflation is good, but we must not overdo it and stretch already weakened structures When the tube is inflated we must control the effect by counter-pressure on the drum from outside. Yates makes the counter-pressure by filling the meatus with artificial cerumen Massage of the drum with various electric vibrators rarely does any good; injections of fibrolysin never do Filling the middle ear with oil by an intratympanic catheter and then massaging with a Delstanche masseur does good in some cases, but the weak spot of this method is that it is sometimes much easier to fill the middle ear with oil than to empty it.

I think the conclusion to be drawn from all this is that in these cases of relapsing Eustachian catarrh and "catarrhal deafness" we cannot afford to let the process go on unhindered and we cannot afford to neglect any soundly based method of treatment

The cases we group as "nerve deafness" are certainly of widely different origin, but it is convenient to consider them together as they have clinical features in common. There is a loss of bone conduction, hearing is easily *fatigued,* and high tones are lost before low ones, so the patient has great difficulty in picking up a conversation when several people are talking together because it is largely the overtones that are responsible for the difference between voices.

It is a safe rule that anything which can cause atrophy of the optic nerve can cause atrophy of auditory nerve; so in these cases we must first eliminate any toxic factor

Among the exogenous toxins quinine, tobacco perhaps, arsenic are the most important Of the genous factors sinus suppuration is the most but not, I think, the most common. Intestinal is often overlooked, and dental sepsis is perhaps most important of all In this connexion there curious point I have known several cases of and nerve deafness cured by removal of an wisdom tooth There can be no doubt that which are regarded as "early senile deafness" and missed as incurable are really cases of toxic deafness.

Some cases of nerve deafness are due to nephritis and some, it is said, to diabetes. Syphil of course, the classical cause of nerve deafness, now syphilitic deafness is rather rare, in this at any rate

Then there is a group of cases where nerve complicates middle-ear deafness If Wever Bray are right, overstretching of the and loosening of the ossicular chain would picture very like true nerve deafness; in some of chronic middle-ear effusion there may be absorption of toxins through the windows degeneration of the cochlea, another reason for and thorough treatment of catarrhal conditions

Injury is a common cause of nerve deafness so much the injury by fractures of the skull or sions, but the chronic injury caused by noise work in Russia has shown that noise deafness is more easily caused if there is any Eustachian tro *I think this again is due to interference* with the cular chain We know that a normal defence noise is fixation of the stapes by the stapedius m and if the muscle is not working properly we lose defence This is a very important practical patients with damaged ears must *protect* thems as far as possible against external noise One of mine, who usually hears quite well in spite radical mastoid operation on both sides, was deaf hours after a long drive in a disgustingly racing car.

About otosclerosis I would say this Just a patient has otosclerosis, which affects both nerve and the middle ear, there is no reason letting him have other sorts of deafness as well. very fact that he has changes in his middle ear nerve makes it vitally important that those should not be encouraged by an Eustachian tion or a toxæmia

In the last few years our diagnosis of ot has been greatly helped by Graham H method of taking skiagrams of the labyrinth, and to the present I have never known a positive graphic diagnosis by this method clinically wro

As to treatment, we have tried every co of phosphorus, calcium, and endocrine therapy with much real benefit, except in odd cases

From time to time we have tried making new wi in the labyrinth, and very often there is an imme improvement in hearing Unfortunately this ever lasts more than a few months, but recently S has tried again with a new method and has had remarkable results But his method is technically difficult, it makes very great demands on the pat three or four operations are often needed—and it is *free from danger to the remaining* hearing or even to patient's life. For these reasons we are waiting to what amount of success he attains, and how much that success is permanent, before we start doing it.

Now we come to the deaf patient who is not he *by any form of local treatment* What can we

? In the first place we can tell him that it is rare anyone to go "stone deaf" Most deaf people e some trace of hearing left, and that trace of ing they should be encouraged to use One ous but very real difficulty is that most people ut when they are talking to a deaf man, and when ble shout their faces are apt to fall into lines of e rage Again and again deaf people will say ople get so angry when they talk to me" We t get the coöperation of the patient's family

i the last two years a method of treatment by ort waves" was put forward from Voss's clinic, this has *not* been generally accepted X ray tment and radium treatment seem to me entirely arical, and unexcused either by reason or by ilts

i the preparation of electric aids we have ainly advanced considerably Many patients, cially otosclerotics, derive great benefit from them moyez said that to be relieved by an electric aid ie one grim privilege of the otosclerotic) But the must be fitted to the patient Buying an aid hazard is useless, and worse than useless because s discouraging The weak spot about the best tric aid is that it can only make sounds louder, so s not much use to the patient who can hear ything if it is said slowly These patients are arrassed rather than helped by electric appliances

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MISTAKES IN DIAGNOSIS

(Dr Donald Hunter)

OUR causes of mistakes in diagnosis are poor ory taking, defective observation, faulty judgment, ignorance Whatever impression clinical teachers have to the contrary, the last is the least ortant

istory taking often requires tact and patience if is to decide between useful information and ulous nonsense There is usually one symptom ch troubles the patient more than any other—the *enting symptom* Special attention should always paid to it It is a good rule not to ask leading stions when taking a history, but once a tentative nosis has been made from the presenting symptom well to ask for corroborating symptoms In any it one must be willing to listen to what the ent's relatives and nurse say and to use the rmation without bias In one of the early cases sittacosis a clue was given by the unlikely remark think auntie has what the parrot died of '

lany mistakes are due to an imperfect investigation he patient's daily life For instance, a girl of 19 plained of abdominal pain and radiograms of her io and stomach were taken in several hospitals. on inquiry it was found that she was employed in ctory where she spent her time in sandpapering l painted perambulators The family history may al facts of equal importance, especially in such ditions as familial hæmolytic icterus. As to the ss itself a knowledge of the sequence of events make all the difference It is especially important hronic diseases of the chest and abdomen

woman of 23 after a month's illness was admitted to ital with empyema It was drained but pyrexia and gh persisted The history was reinvestigated and it found that a month before the empyema was diagnosed had suddenly choked while eating a mutton chop fact was not brought to light until three months after incident and though bronchoscopy was performed a large fragment of mutton bone was removed the ent died four years later with bronchiectasis and pneumonia

A man, aged 62 was admitted for investigation of supposed carcinoma of the colon Signs of intestinal obstruction developed and at an emergency laparotomy a gall-stone impacted in the ileum was found This condition has a characteristic history advancing by stages, and the man died because of bad history taking It is no consolation that 85 per cent of these cases are missed anyhow.

Nearly all the avoidable mistakes in diagnosis come under the heading of *defective observation* In the first place the observation is all too often incomplete For the ideal physical examination a patient should be completely naked It is fatal to try to elicit signs through gaps in the clothing If your patient cannot be convinced that complete examination is necessary the case had better be abandoned It is utterly unpardonable to make a diagnosis on the patient's description without examining him, and it is because this is sometimes done that people arrive at hospital with the diagnosis of rheumatism when they are really suffering from suppurative arthritis, acute osteomyelitis, scurvy, herpes zoster, pleural effusion, multiple myelomatosis, osteitis deformans, secondary carcinoma of bones, neurosyphilis, or spinal cord tumour—to take a few examples

For purposes of diagnosis one should carry the following instruments (for invariable use) a clinical thermometer, tongue spatula, torch, patella hammer, ophthalmoscope, sphygmomanometer , and (for occasional use) glove for digital examinations, auroscope, laryngoscope, transilluminator, and hæmoglobinometer It is easy to forget to palpate for lymph glands and to neglect hernial orifices. Omission to test the urine often brings disaster, and so does failure to examine the rectum, the pupils, and the knee jerks—as is well enough known but easily forgotten

Faulty judgment —Many highly intellectual men have poor judgment others who have never troubled to give adequate attention to anatomy, physiology, pathology, and pharmacology have good judgment Dr Robert Hutchison points out that it seems to be an inborn faculty, the result of a union of mind and character, which a man either has or has not He regards it as much the same thing as common sense and closely allied to a sense of humour He greatly doubts whether a man can improve his powers of judgment , for myself, I still hope he is wrong. There is no such thing I believe, as clinical instinct or clinical intuition When you say you came to a conclusion by clinical intuition it means that you observed something which led you to a conclusion but were too lazy to define what you observed

We should approach every case with an open mind and this is the main reason for consultations. The layman is fully justified in his desire for an independent opinion, by which he means the opinion of someone who comes to the case without preconceived ideas In the matter of physical signs each man should form his own judgment, however great the authority of the previous examiners In the words of Dr Adolphe Abrahams, none of us ought ever to be offended at the scrutiny of our observations if we are right we shall be confirmed if we are wrong it is best to be corrected , and if it is a matter of interpretation, difference of opinion is legitimate No doctor can remain entirely immune from mistakes due to bias In a man complaining of abdominal pain it is easy to become so obsessed by this that one neglects to pay attention to the chest and spine, thereby missing caries of the spine carcinoma of the lung or infarction of the heart The specialist is naturally prone to dwell upon the particular features of his specialty, and only a good general training can combat the perpetual tendency towards this obsession and preserve a proper sense of values The general practitioner also is liable to obsessions Such was the case in a man whose wisdom was tempered by emphysema and chronic bronchitis He went radiantly through life projecting into patient after patient his own disease In return he reaped a full harvest of false physical signs which led him invariably to miss pulmonary tuberculosis and intrathoracic neoplasm. We are all aware of many opportunities of error, and I will only instance among them the case with equivocal signs such as encysted ascites simulating ovarian cyst, and the patient with more than one disease.

A man of 42, in the out-patient department, complained of dyspeptic symptoms including epigastric pain A diagnosis of extensive pulmonary tuberculosis was made and confirmed by X ray and sputum examinations Later he wrote a letter complaining that I had missed the biggest gastric ulcer ever seen and that this had been treated by partial gastrectomy in another hospital

The misuse of accessory methods of diagnosis is a well-known source of error. You should not be so timid as to distrust your own judgment and yield to pronouncements from the X ray room or laboratory which do not fit in with your clinical findings For example, everyone knows that carcinoma of the colon or œsophagus are not ruled out merely on negative X ray findings.

Ignorance is a matter of degree; it may be condonable or inexcusable It commonly occurs in the form of failure to think in terms of the disturbance of function to which a clinical state is due The man thus afflicted can diagnose correctly the anatomical valvular lesion in heart disease but is apt, when faced with heart failure, to mistake the symptoms and signs for something else. He is then found treating a case of auricular fibrillation and congestive heart failure as acute nephritis because he has found œdema with albumin and blood in the urine He withholds digitalis with dreadful results

It is surprising how many men otherwise good at their work have never grasped the difference between upper and lower motor neuron paralysis or the significance of segmental innervation The fundamental differences between obstructive and hæmolytic jaundice are grasped only too rarely.

Especially perhaps in pathology will a good training tell. A man well trained in the post-mortem room begins to be entitled to call himself a physician, he has learnt what does happen as opposed to what theoretically might happen Having constantly met such an anatomical abnormality as Riedel's lobe of the liver he remains aware that it gives rise to physical signs having no bearing on the diagnosis He knows that the lesions of tertiary syphilis are more often granulomatous and fibrous than gummatous You never hear him diagnose gumma of the spleen, kidney, meninges, stomach, or lung, because he has learnt that these are never seen Nor is he so foolish as to state that cerebral hæmorrhage is always fatal the first time it occurs, for he is familiar with the yellow-walled cystic lesion of past hæmorrhage. He knows that very often in secondary carcinomatosis the site of the primary growth cannot be diagnosed during life, that diseases such as peri-arteritis nodosa and occlusion of the ostia of the hepatic veins cannot be diagnosed by clinical methods, and that the only safe diagnosis of Hodgkin's disease rests in the biopsy of a gland.

Under the heading of ignorance one must also mention innocence of the ways of the world, especially in relation to pregnancy and venereal disease Inexperience again is a fruitful source of error. The young doctor may fail to grasp the wide vari possible in the same clinical picture, and is apt to the deaf child mentally defective, to diagnose rheumatism before the age of two, and to forget wax in the ears will cause deafness. Want of exp ence too may lead him to overlook carcinoma bec the patient has no wasting, or thyrotoxicosis bec there is no exophthalmos He is apt to instruments of precision, thankfully attributing symptom whatever to hyperpiesia on the strength finding a high blood pressure. Inexperience ably means a want of acquaintance with rare There is this comfort, however, that it is a good rule not to diagnose rarities.

Certain therapeutic aids to diagnosis should be neglected. For example, the patient suffering acute arthritis with fever who is not considera better after 48 hours of treatment with full dose salicylates almost certainly has not got fever. Similarly, gastrogenous diarrhœa will promptly checked by the use of hydrochloric ac idiopathic hypochromic anæmia will show a dra response to large doses of iron. Where a anæmia fails to react to iron, infection, nephritis, carcinoma should be suspected. In cases of œdema thyroid by mouth begins to act within ten Emetine must often be tried in the treatment amœbic dysentery—which is now endemic in country—even where *Entamœba histolytica* or are not found in the stools, and of course there is drug so universally used as a therapeutic aid diagnosis as quinine

In conclusion, it is quite impossible that you always be right in your diagnosis, for very often are attempting to make a balance of probabilities, arrive at a correct conclusion on inadequate evide We may find consolation in the words of the Thomas Addison: "All doctors make mistakes; best is he who makes least"

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK OCT. 27TH, 1934

Notifications—The following cases of infecti disease were notified during the week Small 0; scarlet fever, 3787; diphtheria, 1839; fever, 26; acute pneumonia (primary or infl 587, puerperal fever, 37, puerperal pyrexia, cerebro-spinal fever, 15; acute poliomyelitis, encephalitis lethargica, 5; dysentery, 9; ophthal neonatorum, 90. No case of cholera, plague, typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the L County Council on Nov. 5th–6th was as follows Small 0, scarlet fever, 1895, diphtheria, 1899, measles, whooping-cough, 162; puerperal fever, 26 mothers babies), encephalitis lethargica, 269, poliomyelitis, 8, diseases," 300. At St Margaret's Hospital there were 16 (plus 6 mothers) with ophthalmia neonatorum.

Deaths—In 121 great towns, including Lon there was no death from small-pox, 3 (0) from mea 5 (0) from scarlet fever, 7 (2) from whooping-co 37 (7) from diphtheria, 51 (18) from diarrhœa enteritis under two years, and 30 (9) from The figures in parentheses are those for London

Manchester reported 6 of the deaths from diphtheria, Ply 4, Liverpool 3, Luton, Leeds, and Swindon each deaths from diarrhœa 3 occurred at Sunderland and at Bir ham, no more than 2 in any other large town

The number of stillbirths notified during the week 253 (corresponding to a rate of 39 per 1000 total bir including 43 in London.

MEMORIAL TO DR LANKESTER—On Oct. 22nd Rev W. P G McCormick dedicated a clock outside East End Maternity Hospital to the memory of the Dr. Owen Lankester, who for 32 years was chairman the hospital

SPECIAL ARTICLES

MEDICINE AND THE LAW

ctor Fined for Dangerous Drugs Acts Offence

At the Marylebone police-court last week the gistrate disposed of two prosecutions under the ingerous Drugs Acts which had caused him some ficulty Miss A, the proprietress of a Bayswater sing home, was summoned for being in unauthor-l possession of 25 grains of heroin supplied on the scription of Dr B , Dr B was summoned for ing and abetting her in such possession and for ing to specify in his prescriptions the name and dress of the person for whose treatment they were en Miss A had become a drug addict, it was ed, as the result of drug treatment to remedy pain ered after a series of operations following blood soning in 1916 She had obtained supplies of oin when it was prescribed for patients in her sing home Afterwards, when there were no ients at the home for whom heroin was prescribed, B had prescribed for her in the name of Mrs C , patient who subsequently died Later again, at s A 's suggestion, Dr B prescribed for her in the ne of Miss D , another patient, whom Dr B had er seen Miss D was being attended by Dr L , left the home in July but Dr B continued to scribe heroin for Miss A in the name of Miss D s complicated story was revealed to the police had made inquiries of Dr E as to the quantity heroin prescribed for his patient The position of s A was that her possession of the heroin was not uthorised since it was prescribed for her by a tor—though not in her true name The case inst Dr B was that he had not put the true name address on the prescription , this, he submitted, a mere technicality But it was also said that should not have been content to continue to pre be for Miss A at the rate of 25 grains of heroin ry three or four days without any attempt to ct a cure and reduce the dose The magistrate ed whether this was an offence under the Acts, ild Dr B 's conduct have been legal if he had tten Miss A 's name and address on the prescription ead of Miss D's ? The prosecuting solicitor wered that it would have been no offence but B might have been asked to appear before the me Office tribunal with the result that his authority prescribe dangerous drugs might be withdrawn magistrate decided that the summonses against s A were not made out and must be dis sed He fined Dr B £5 on each of three sum-ses and ordered him to pay £3 3s costs What r be the merits of these two cases, it may well be ught undesirable that a magistrate should be ed in the position of having to fix the exact dosage ch any doctor should prescribe for any patient magistrate at Marylebone did not purport to ide a medical question of this kind but he arently took into account the continuance of the ge doses as making Dr B 's offence something more n technical Dr B 's treatment he said, had arently done Miss A no harm, " but he must have wn that he was going against the best medical ions in this matter "

Removal Order Refused for Tuberculosis Patient

n a case at the Grays (Essex) police-court, briefly orted in the newspapers last month, magistrates refused to grant an order for removal of a woman suffering from tuberculosis Three doctors gave evidence and the medical aspect of the case was apparently established , the refusal seems to have been due to the fact that the woman was a mother and could not bear to be parted from her baby The magistrates' power is discretionary If they had made the removal order, the woman could have been convicted for obstructing it In Booker v Taylor (1882) an order was made for the removal of a child under Section 124 of the Public Health Act The mother resisted the removal and, on her being summoned for the offence of obstruction, the magistrates were disinclined to convict her Their disinclination took the form of holding that the order was invalid On appeal it was decided that the magistrates had no power to question the validity of the order ; they were bound to convict if there was obstruction Such decisions are simple enough when an order has been made , but the Essex case was one where an order was refused, and, although all these cases must depend upon their own sets of facts it may inspire other magistrates to let their natural sympathy with home life and maternal affection outweigh their sense of the danger to the child

Many public health enactments, with the assent of the country expressed through Parliament, interfere with the liberty of the subject In spite of Magna Carta a scarlet fever patient can hardly be allowed to spread infection by mixing freely with the outside world A novel restriction on liberty was introduced by Section 56 of the Bradford Corporation Act in 1925, whereby a medical officer is allowed, upon medical certificate and with certain other precautions, to apply to magistrates for an order removing to a proper institution any person who is aged, infirm, or physically incapacitated and resident in premises which are insanitary owing to neglect The hint that removal orders of any kind may be applied for is often sufficient for the purpose But if Parliament provides improved arrangements for the care and safety of patients and their relations it is a pity that magistrates should decline to apply them

Judicial Irrelevancy

It is just a hundred years ago since the Central Criminal Court was constituted and the fact has been reviving traditions of some of the judges at the Old Bailey at that period Among the commissioners in 1834 was Serjeant Arabin, famous for his disconnected irrelevance to whom Sir Frederick Pollock devotes a chapter in "Essays in the Law" Brickmakers were, it seems, a bee in Arabin's bonnet "I know High Wycombe," he once observed in addressing his jury , "it is the worst neighbourhood on the face of the earth , the whole country is covered with brickmakers they come from all parts of the earth—I know all about them" So again of a prisoner who had been given a good character by three witnesses—"he was a brickmaker and we all know what a brickmaker's character is" The Serjeant was not the first judicial officer to earn a reputation for non judicial discursiveness and to provide his audience with entertainment [illegible] not unmixed with exasperation Nor is he the las

The habit of airing personal views from the bench in impertinent contexts is one whereof all judges know they must beware The more [illegible] the tribunal the greater the temptation While newspaper reports doubtless give judicial [illegible] a disproportionate publicity, the Hundred of Salford seems to have its Arabin What brickmakers were to the Serjeant, voluntary hospitals are to the Manchester county district coroner. It was his task to hold an inquest last month upon John Livesey Aydon, who was killed in an accident at the Irlam works of the Lancashire Steel Corporation. The man died almost at once, and the body was taken to the Irlam mortuary Two other men received injuries in the same accident which were fortunately not serious It was outside the coroner's jurisdiction to inquire into the disposal of these two patients He extended his inquisition, however, to ascertain on whose instructions the two men had been taken to the Salford Royal Hospital; he pointed out that this voluntary hospital was heavily in debt, whereas the local authority's hospital at Davyhulme had the finances of the Lancashire county council behind it. It was only common sense, he said, that institutions dependent on voluntary subscriptions could not equal the county council's hospital. Among other criticisms he stated that he had seen parcels of food being conveyed to patients in voluntary hospitals, and that he would like to see a considerable improvement in the diet and cooking. These remarks may or may not have been well founded; Serjeant Arabin may or may not have been right in his estimate of brickmakers. But they were matter out of place If voluntary hospitals or brickmakers are to be judicially attacked, they may naturally resent the choice of an occasion when they are unable to reply. The late Lord Brentford, when Home Secretary, is understood to have personally interviewed all candidates for metropolitan police-court magistrateships Before finally selecting them, he would ask them to say candidly whether or not they proposed, if appointed, to chatter from the bench about matters not relevant to the case before them. The Home Office does not appoint coroners, but Lord Brentford's test question is worth bearing in mind.

PARIS

(FROM OUR OWN CORRESPONDENT)

M.O H AND G P.

ASNIÈRES, a suburb of Paris, is setting a useful example to other communities in France in the coordination of public health and general practice. About every ten days the M O H sends to every practitioner a map of the suburb in which the position of every infectious case just notified is indicated by a dot. The postage of a closed letter is 50 centimes, whereas for a printed circular in an open envelope it is only 1 centime Now, an open envelope suggests violation of professional secrecy Such violation is avoided by the fact that only the local doctors hold the cipher key to this map the signs on which show the date of notification of every case, the nature of the disease, the age of the patient, whether he has died or not, and whether he has remained in Asnières or has been transferred elsewhere. Thanks to this system, every practitioner is informed about the infectious cases his fellow-practitioners have had to deal with during the past ten days The M O H. has made himself useful to the practitioners and their patients in another way, by providing them with a woman disinfector, carefully trained for her job at the School of Applied Sanitation founded by the late director of the Pasteur Institute, Dr Roux During the past two years this disinfector, whose services are gratuitous, has lightened the work of the local titioners by instructing, under their orders, embarrassed by some infectious disease in the they must take to prevent its further spread the practitioner has to do is to order the disinfect insure the necessary isolation and disinfection, will then proceed with this work without in any way interfering with the treatment prescribed third way in which the M.O H. promotes between his office and his practitioners is to put at service a card index, providing them with mation about the antecedents of any family in q The information thus given cannot be regarded violation of professional secrecy, for it is in nature of a consultation between the M.O.H. professional brethren.

THE LAYING-ON OF HANDS

According to the law of Nov. 30th, 1892, i illegal for a person without a medical qualific to make a practice of treating patients. It s quite simple till one begins to ask what is "making a practice of," what is "treatment," what are "patients"? Here distinctions are to be so subtle that it is difficult to foretell the any action brought against an alleged quack w his *ministrations have been grossly commercial* transparently fraudulent. The following case, in Paris this summer, shows how unwise it is prosecute for the illegal practice of medicine the "practitioner" is not a rogue The d was a retired governess whom the Syndicat Médecins de la Seine summoned before the Correctionnel. It appeared that she was in the of receiving patients, or persons who considered selves as such, and that she relieved or even them by putting her hands close to them wit undressing them It also appeared that she much respected locally, that many of her were confident of the celestial character of gifts, that she was always generous in works charity, that she did nothing to achieve publi that she prescribed no drug or any treatment, that undertook no manipulations, and that she asked no fee She did not even claim to practise magnet limiting herself to the exercise of a personal whatever that might be She believed it to supernatural, and as she did nor even touch patients, her treatment could be characterised manipulative only by a philological stretch of imagination. A scientist stated in evidence that radiations issuing from the hands of the defen were so powerful that they made the needle galvanometer swing well beyond the limits of graduated scale. He considered that trickery out of the question, and that the radiations he detected were allied to those of radium The w was accordingly acquitted and the costs had to borne by the prosecution A learned disquisitio this case by Dr J. Noir in a recent numb *Concours Médical* stresses the complexity of problem involved without labouring the point this action ought never to have been brought the radiant ex-governess

DIESEL MOTOR EFFLUENT

A recent communication [1] by Dr Laignel-Lav and Dr A F Liber concerns a lorry driver, age who consulted them for a slight attack of bronchitis. On examination he was found to be ing from a finely papular, symmetrical olving the armpits, the inner side of the arms, the er abdomen, groins, scrotum, buttocks, and legs—a ribution differing from that of ordinary follicular which affects the face, chest, and back The ent had been subject to this rash since 1932, from time when he began to drive a lorry with a Diesel ine The rash used to disappear when he dis- tinued driving, only to reappear a few days after he urned to work He had been away from work five s when examined, and the rash was already begin- to fade He also stated that when driving was subject to attacks of giddiness, tinnitus, dache, and nausea, which ended sometimes in iting On three occasions he had momentarily consciousness On leaving the lorry he often gered, not knowing exactly where he was While state of affairs lasted only a few minutes, the liness might persist for several hours A neuro cal examination proved negative, but three other ers of Diesel engines were found not only to be ering *from the same rash, but also to be liable* he *attacks of giddiness and nausea, of which the* driver had complained The authors of this munication are inclined to believe that the ducts of combustion of heavy oils must be held onsible for both groups of symptoms

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[1] Presse Médicale, Oct. 10th, 1934, p. 1578

SUNSTROKE AN OCCUPATIONAL DISEASE ?

hile at work last July shifting gravel a navvy apsed from sunstroke The doctor who treated was informed by his employer that the company which the *workman* was insured did not *accept* stroke as an occupational disease The insurance pany was apparently within its rights for accord- to French legislation, ailments caused by the on of the forces of nature cannot be regarded as upational *If however a workman is injured in a* al which takes place on his employer's premises ing work hours, compensation may be claimed an occupational accident The position seems a paradoxical

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SCOTLAND

(FROM OUR OWN CORRESPONDENT)

THE NEW GOVERNMENT BUILDINGS

t is announced that the scheme for the new dings on the Calton Hill is to proceed These dings which will take five years to finish and will about £750,000, are to have room for a Scottish ce the Department of Health, the Department Agriculture, the Fishery Board the Scottish ication Department, and the General Board of trol, and will accommodate some 1200 civil vants. Their erection has been talked of for 30 rs, but Scotland has stood out for designs that ld satisfy public criticism, and those proposed ally a few years ago were hooted off the stage re is little doubt that the Nationalist movement had the effect of bringing about a public improve t long overdue Only those living in Scotland are scious of the intensity of the resentment felt at don's domination even by people not interested olitical Nationalism

MILK IN SCHOOLS

nder the new arrangements of the Scottish Milk keting Board milk is supplied to school-children less than general market prices each child gets hird of a pint for ½d and no charge is made to se who cannot afford it Whenever possible the k will be certified or tuberculin tested That is the highest grade, and it is to be hoped that provision will be made to record and analyse the exact figures of distribution Looking back on 30 years of agitation about the feeding of school-children, not to speak of their medical inspection, one can only record amazement at the rapid pace at which the present scheme is realised

VOLUNTARY NURSING ASSOCIATIONS

At a meeting of the Fife County Nursing Association there was an expression of misgiving about the future of the county nursing associations for all over Scotland the voluntary associations and the official services are to some extent at cross purposes The Departmental Committee on Medical Services has taken evidence on the working of these associations, some of which are perfectly correlated with the local authority services and others in loose relation There is always a little difficulty where dual control is in force and the nursing associations have not escaped The county medical officer for Fife thinks that the present inquiry should offer a chance to nursing associations throughout Scotland to acquire a better position than they have had in the past It is not quite clear what Dr Pratt Yule intends, but it is obvious that two services cannot be run together on different planes The essential thing is that by voluntary or official services the whole ground should be adequately covered

EDINBURGH ROYAL INFIRMARY

Sir Thomas Whitson, chairman of the managers of the Royal Infirmary, has issued an appeal for new and increased subscriptions to maintain the present services. This is distinct from the appeal for building and extension He points out that the subscriptions for current services are far from what they ought to be The infirmary has 1000 beds, and last year over 20,000 persons were treated in its wards and almost 70 000 in the out patient departments It takes over £160,000 annually to maintain the present services and the cost of running the enlarged hospital will exceed £180,000

VIENNA

(FROM OUR OWN CORRESPONDENT)

THE MEDICAL PROFESSION IN THE NEW CONSTITUTION

SINCE the political upheaval last February there has been a complete change in the political conditions of this country and the long intended change in the constitution which could not win the assent of Parliament has been put into force by Government decree This new constitution is based on something very like the medieval system of guilds It does away with Parliamentary procedure and gives full power and authority to the Government, on the other hand certain representative bodies are allowed to discuss proposed laws and regulations and give their advice on them if asked to do so Each of these bodies is called a *Stand* (profession) and there is one for public service, one for commerce one for "liberal vocations" and one for industry Each consists of two bodies, the employers and the employees, and is subdivided into organisations which may be local or regional according to circumstances

Doctors belong to the *Stand* of liberal vocations and to the section called *Gesundheitswesen*—that is to say the 'profession' of medical practitioners, veterinary surgeons and midwives and their sanitary staff Those in public employment owe allegiance, however, to the *Stand* of public service, and their representatives are appointed by the minister of social care and public health The special organisation which has to see to the requirements of the medical profession will be called the *Aerztekammer* (chamber of doctors) which has a section for medical ethics and education and a section for economic problems The regional chambers will be controlled by a *Fuhrer*, or leader, appointed by the Government, while the local organisations (with compulsory membership) will simply act as boards of information for the doctors and the governing bodies The chief representatives of the medical profession may also be appointed by the President of the Republic At present it must be admitted that there are difficulties and misunderstandings about the actual status of the representatives and their rights and duties.

The chief and distinctive feature of the system is the absence of all voting and elections for these posts. Those who hold them will be appointed from above Individual opinion or action will be scarcely noticeable and is bound to be useless, while all party or political work is altogether excluded It is assumed that everyone will unite in the so-called Patriotic Front, which closely resembles a compulsory union, and it remains to be seen how the arrangement will work. A certain amount of dissatisfaction prevails because a number of men who had taken part for many years in the organisation of the profession—with success and for the common good—have so far been excluded from the representative bodies The only hopeful feature of the situation is the fact that all these regulations are tentative, and final arrangements will be made only after the working of the system has been thoroughly tested in action.

CLOSURE OF THE FIRST GYNÆCOLOGICAL CLINIC

In the process of reducing expenditure which is necessitated by the unsatisfactory state of Austrian finances, the minister of education has decided to close finally the First Gynæcological and Obstetric Clinic of the Vienna General Hospital (and University), whose last chief was Prof Peham In medical circles regret is widespread and openly expressed, for this was one of the foremost Viennese institutes of teaching and research From this clinic the discovery of the ætiology of puerperal sepsis by Semmelweis came forth some 80 years ago; and it does not detract from his merits that the views of this young Jewish surgeon were at first laughed to scorn so that he was even forced to leave Vienna because of his "blasphemous" ideas The tradition of the clinic is excellent and men like Schauta and Chrobak and Halban and Adler, whose names are familiar to every gynæcologist in Central Europe, were pupils and teachers there The building itself is to be handed over to the First Surgical Clinic and an accident ward will be established in it After the Clinic is closed Vienna will have only the Second Gynæcological Clinic (under Prof Weibel) as a teaching centre for students, together with the teaching institute for midwives which Prof Kahr directs The other obstetric and gynæcological establishments of Vienna have no facilities for instruction.

New Hospital at South Molton.—Lord Fortescue has opened a new cottage hospital for South Molton and the surrounding district Till now a house has been used for the purpose but this has proved inadequate and a modern building has now become necessary.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg Comdrs A R Ewart to *Drake* for R N.B.; G. D. J Ball to *Pembroke* for R N B

Surg. Lts D A Hovenden to *Berwick*, and R L to *Pembroke* for R N B.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lts. W. M MacGregor, W. T. R Chapm F. T Doleman promoted to Surg. Lt.-Comdrs

Surg. Lt R H Wheeler, commission termina transfer to R A.M.C

Proby Surg Lt K. E. O. Ringdahl to *Iron Duke*

Sub-Lt R A Stenhouse, transferred to Medical as Proby Surg Sub-Lt, and attached to Sussex Div

ROYAL ARMY MEDICAL CORPS

Short service commissions—The following who presented themselves last month, have been commissions as Lieutenants on probation R H L.R.C P (Roy Coll Surg Edin), J A Scott, M B of Aberdeen); J M Carnow, M B (Univ of G R H Wheeler, L.M S S.A. (Univ of Sheffield), Denning, M R.C S. (Univ. of Bristol), J O'Connell (Univ. Coll , Cork), E. J. Pryn, M R C S (Guy's H J A D Johnston, M B (Univ of Glasgow), W. M. M R C S. (St Bart's Hosp); J. J Sullivan, M B *Coll , Cork*), I U Young, M B (Univ of J. J. C Rainsbury M.B (Univ of Sheffield), R son, L L M (*Roy Coll Surg , Ireland*), A J A C L R C P. (Univ of Edinburgh), O R L L P M R C S (St George's Hosp), W G Greene, (Roy Coll Surg , Ireland); J, Reeve, M R C S minster Hosp), P L E Wood, M R C S (St Th Hosp), F. Williams, M R C S (London Hosp); O'Connell, M B (Nat Univ , Ireland), H H M B. (Univ Coll Hosp); and J A Sidebottom, M.R L D S (Guy's Hosp).

TERRITORIAL ARMY

Lt -Col J. Taylor, M D , to be Col , and is app A D M S *51st (Highland) Div*

Capts W A Ramsay and G M Lewis to be Maj

Lts J L Orr and F A Edwards to be Capts

The notification regarding Capt R Anderton appeared in the Gazette of Sept 28th, 1934, is can *(vide* The Lancet, *Oct 6th, p. 770)*

TERRITORIAL ARMY RESERVE OF OFFICERS

Maj D F. Dobson, having attained the age limit, and retains his rank, with permission to wear the scribed uniform.

ROYAL AIR FORCE

Flight Lt (Hon Squadron Leader) F. J P relinquishes his temporary commission on comp service and is permitted to retain the honorary Squadron Leader.

RESERVE OF AIR FORCE OFFICERS

N P *Henderson* is granted a *commission* as Fl in Class D

INDIAN MEDICAL SERVICE

The undermentioned officer has vacated appoint India —

Surg to H E. the C -in-C—Maj M. B King, R A M C

The undermentioned appointment has been India .—

Surg to H E. the C.-in-C—Lt -Col J Scott, D O B E , I M S

The undermentioned appointments are made —

To be Lts (on prob) P. H. Addison, C U Wick

Lt. (on prob) D W Taylor is restd to the estb

Lt (on prob) E C Rowlette relinquishes his prob.

Capt J. M Sclater resigns his commn

CORRESPONDENCE

SNAKE VENOM AS A COAGULANT

To the Editor of THE LANCET

SIR,—As one who has worked at snake poisons y I make some suggestions for the more extended of the coagulating effects of Russell's viper nom described in the important paper by Dr R G cfarlane and Dr B Barnett in your last issue e solid clotting of the venous blood in the systemic d portal veins and the pulmonary artery, produced small animals by the injection of such a venom, es not appear to occur in snake bites in such large mals as man owing to the relatively small dose venom per body-weight, but reduced coagulability 1 hæmorrhages are met with in human viperine soning The anomaly is explained by my finding t the absorption of a subminimal lethal dose duces a negative phase of reduced coagulability the blood, when a further lethal dose caused death vasomotor paralysis This occurred in all four erine poisons I tested, including that of the tlesnake which differs from Russell's viper in not ducing intravascular clotting even with a fatal se intravenously Caution is thus indicated in ng Russell's viper venom by injection but as the nimal lethal dose in animals is 1 milligramme r kilo body weight, and the authors have shown t the 1 in 100,000 solutions they have used have local or general toxicity, I think they might safely tried in the following conditions

First, I would suggest a trial in varicose veins *after* failure of such an established remedy as sodium rrhuate, which acts differently from viper venoms, I found it had no direct effect on the in vitro gulation time, but had an irritant action on the ima followed later by clotting Secondly, the ssibility of injecting viperine venom *into aneurysms* serves consideration, and I suggest that it might st be tried in aneurysm of an extremity permitting the control of the circulation through it by a rniquet during, and for some minutes at least er, injecting a sterule of 1 in 100,000 dilution of er venom into the cavity, *followed by slow relaxa* n of the pressure on the main artery of the limb firm clotting of a lasting nature should result from o or more injections at intervals of several days method might justifiably be extended to the re serious large thoracic type of aneurysm the *culation through* which could not be directly trolled

Some years ago I suggested to a patient with a lging thoracic aneurysm the trial of an injection sodium gynocardate which induces intravenous tting more readily than sodium morrhuate but led to get consent, viperine venoms now appear me to be much more likely to be effective in the atment of aneurysms than by hydnocarpates

I am Sir, yours faithfully

LEONARD ROGERS

lampstead, Nov 3rd

THE LIVERPOOL DEPARTMENT OF OBSTETRICS

To the Editor of THE LANCET

SIR—It is proposed to place a bronze mural blet on a marble base in the department of stetrics and gynæcology of the University of verpool to signify that the departmental museum al laboratory was founded by Emeritus Prof Henry iggs The cost will be between £50 and £[illegible], and thought that old students and other friends may like to contribute Any intending contributors would assist by communicating with Mr J St George Wilson, F R C S, 11, Rodney street, Liverpool, or with me, stating what they would like to subscribe No subscriptions should be sent as yet

I am, Sir, yours faithfully,

J HAYWARD WILLETT

72A, Rodney-street, Liverpool Nov 5th

BACTERIOLOGICAL TESTING OF MILK

To the Editor of THE LANCET

SIR,—The scheme of the Milk Marketing Board for the supply of milk to school children is now in operation It has been decided that all milk supplied to schools under the jurisdiction of the London County Council shall be pasteurised, and in accordance with the arrangements made between the medical officers of health of the Metropolitan Boroughs and the County Council, samples are being taken for chemical analysis and bacteriological examination

It is suggested that the procedure to be adopted in the event of adverse reports being received upon these samples shall be to issue a warning in respect of a first unsatisfactory sample, and to withdraw the approval of the source of supply should a second sample be reported not to conform to the prescribed standards The Milk (Special Designation) Order, 1923, lays down certain conditions under which graded milks may be sold and these include a requirement that, on a sample being taken after pasteurisation and before delivery to the consumer, the milk shall be found to contain not more than [illegible] bacteria per cubic centimetre The Order provides, further, that a licensing authority, if they are satisfied that any of the conditions upon which a licence is granted are not being complied with, may suspend or revoke the licence It is my considered opinion that most of the reports now received with regard to the bacteriological examination of milk are unreliable, and I suggest that, should the above procedure be carried out, serious injustice may be done The question of sampling and examination of graded milks is one to which I have given considerable attention in the past and, in support of my view, I would draw your attention to the following [illegible]

Some time ago I became [illegible] with the results of the examination [illegible] which at that time were being [illegible] of the largest laboratories specialising in this work in the country. I therefore decided [illegible] samples to [illegible] laboratory Two [illegible] were selected [illegible] delivery at each [illegible] in Ham[illegible] and duplicate [illegible] each The [illegible] methods were [illegible] sample [illegible] sterilised under [illegible] conditions [illegible] laboratory, were [illegible] the samples [illegible] were immediately [illegible] submitted to the [illegible] and [illegible] of well known [illegible] by one [illegible] 39,[illegible] c cm. [illegible] other [illegible] the [illegible] that [illegible] above [illegible]

[illegible]

The following Table gives particulars of the reports received —

Sample	Bacteriologist	Temp on arrival	Bacteria per c cm	Presence of *B coli* (48 hrs).			
				1/10	1/100	1/1000	1/10,000
		° C.					
1	Lab 1	13	9,270	+	—	—	.
2	,, 1	13	14,300	+	—	—	.
3	,, 2	11	147,333		—	—	—
4	,, 2	11	3,400,000	.	—	—	—
5	,, 3	14	36,000	+	—	—	
6	,, 3	14	47,000	+	+	—	

It will be seen that one report gives a bacterial count of 9270 per c cm. and another 3,400,000 per c cm for the same milk and that the results obtained by one laboratory vary from 147,000 to 3,400,000 Other tests have been made and the above figures are typical of the results obtained.

In view of these facts I think it must be agreed that to withdraw a licence upon such unreliable data would be most unjust. In Memo 39/Foods, the Ministry of Health set out a suggested technique for the bacteriological examination of graded milks If this is properly carried out the results should be reasonably comparable. I can only assume that, in making their examinations, bacteriologists do not faithfully and carefully carry out the suggested procedure Unless every stage from the composition of media to uniform heating in the incubators is standardised, the results must vary.

There is one point in the Ministry's suggested technique to which I would draw attention In para 12 it is stated that the original sample and each dilution must be shaken 25 times, each shake being an up and down motion, with an excursion of about one foot. This shaking is, of course, to distribute the organisms in the sample evenly and secondly to break up any bacterial aggregates which may have been formed. Most samples of graded milks are submitted to the bacteriologist in the bottle in which the milk is sold, and as such bottles are usually entirely filled with milk, it is unlikely that any proper mixing is obtained by shaking unless the milk is first transferred to a larger bottle Again, the vigour with which the shaking is conducted may make an appreciable difference to the final count. I suggest that more uniform results would be obtained by the use of a mechanical shaker working at a standard speed

Reviewing the position as it now stands, I am of opinion that little value can be placed upon the reports received and that until a more standard practice is adopted by bacteriologists, both time and money are being wasted in submitting milk samples for examination

I am, Sir, yours faithfully,
J B. Howell,
Nov. 1st Medical Officer of Health, Hammersmith.

USE OF THE WORD "PANEL"

To the Editor of The Lancet

Sir,—May I be permitted respectfully to suggest that the term "panel dentistry" as used on page 940 of your issue of Oct 27th is likely to convey, especially to foreign readers, the mistaken notion that a person receiving dental benefit under the English national health insurance system is restricted in his choice of dentist to a panel of dentists? There is in fact no such restriction; there is no panel of dentists. An insured person who has received a dental letter from his approved society is free to take it to any dentist he chooses In this respect, as in many others, benefit differs administratively from medical be under which medical and pharmaceutical service given by doctors and pharmacists who have the respective panels of their areas

The use of the term "panel" as an adj synonomous with "health insurance" is tunately growing, and "panel system" is sometimes used as meaning any system of provi medical and allied services under a health insu scheme instead of in its proper sense—namely, denote the system by which such services are by practitioners whose names appear on a list panel) on which any qualified practitioner has right to have his name included The system formulated by the British Medical Associatio years ago, and, embodied at the instance of Association in the National Insurance Act, became one of the features that distinguish national health insurance scheme from those of countries. I am, Sir, yours faithfully,

Gerrards Cross, Nov 2nd. G. F. McClea

PURKINJE AND THE HARVEIAN ORATIO

To the Editor of The Lancet

Sir,—The kindly criticism of Prof. Suk in week's Lancet bids me call attention to my that the "Cellular Theory of Tissues" was the and almost immediate outcome of Purkinje's The great Purkinje who invented the conceptio the physical basis of life and first called it "pro plasm," and who at the Naturfo at Prague in 1837 announced the doctrine of identity of the fundamental structure of plants animals, doubtless had a very clear inspiratio to the structure of living things, but he calls plants elements "cells" and the animal "granules" It was left to Schleiden and instigated by that glorious pioneer Johannes in his laboratory in Berlin to turn Purkinje's lation into a discovery of fact and gain its imme acceptance for all time In "The Cell in Develop and Heredity" (New York, Macmillan, 1925) E B Wilson puts the position clearly in these wo "Schleiden and Schwann are universally and rig recognised as the founders of the cell theory, b every other great generalisation it was preceded a long series of early investigations beginning the memorable microscopic studies of Leeuwenh Malpighi, Grew, and Hooke in the latter half of seventeenth century" Schwann's announcement proof came only two years later (U 1839, p. 227) "We have shown that all living or isms are composed of essentially like parts—nam the cells, and that these cells are formed and in accordance with essentially the same laws" like manner it seems clear that Purkinje measuring the curvature of the cornea and lens his simple microscopes did see the fundus of the and invent the conception of ophthalmoscopy it was Helmholtz directly instigated by Purk work who produced, again in John Muller's labora the ophthalmoscope as a practical discovery seems to me to add rather than to detract from greatness of the pioneer that he should have imp immediate discovery which he himself did not

Dr Suk does not deny that Purkinje was a but points out that he had not finished his tra when he was influenced by Humboldt, Goethe Rust to devote his life to science. I have been in the short time at my disposal to trace any auth to the several references in English literature peasant boy of *Libochowitz* was of "gipsy" action, which appeared about the time he was to a Fellow of our Royal Society in 1850 Possibly was a "nickname" in the early days at Breslau n he was intensely unpopular, for there he was a igner, put in by influence, and he had no gifts tsoever as a lecturer Since he was in his later s the political leader of the Slavic party at Prague, Suk's denial appears to me to be justified

y reference to Prochaska as a professor in Moravia ship of the pen, for every historian knows that this at man was a Moravian who was professor of romy and diseases of the eye at Prague

I am, Sir, yours faithfully,

JAMES COLLIER

impole-street, W, Nov 3rd

To the Editor of THE LANCET

R,—I have read with interest the Harveian ion published in THE LANCET of Oct 20th and tled Inventions and the Outlook in Neurology ke the liberty to correct some statements in the ion headed "Purkinje The Nerve cell"

urkinje (recte Purkyně) was not of a gipsy family idea is sure to have sprung up from confounding double signification of the word "Bohemian" vas born in 1787 of a Czech family—i e, Bohemian zechoslovak (which means the same thing since war)—at a little village near Prague His stay he Piarist Order was only a little episode of his h At about 20 he freely devoted himself to the y of natural science and medicine From 1823 as a professor of physiology at Breslau and from at Prague Besides his histological discoveries tioned in the Harveian Oration, he is one of the mious founders of modern experimental physiology er having forgotten his Czech origin, even when ad, and after his return to Prague, he took an e part in the efforts for the revival of our nation he belongs to our leaders, whose work has been essfully ended by T G Masaryk

arvey's nation will fully understand our being so d of his genius The more so as among the 50 gn scientific societies which honoured J F yně with their membership, there was also the al Society of London (1850)

I am Sir, yours faithfully,

S ANTOŠ

saryk University Medical Clinic Brno,
Czechoslovakia Nov 2nd

INCAPACITY CAUSED BY MINERS' NYSTAGMUS

To the Editor of THE LANCET

n,—Mr G H Pooley *offers* an attractively le ætiology of the disability of miners' nystagmus r a reference to the large number of miners who working in spite of having nystagmus he notes many miners "have become neurasthenic not use their eyes are moving but because having 'indisposed,' they have been advised to go on pensation' for nystagmus" As a remedy for condition he proposes a statutory time limit for payment of compensation, though if his premises correct, no compensation at all would surely be r still

e problem is much more complicated, the wing being my view of the facts —

In some safety lamp mines as many as 38 per cent e men show oscillation of the eyeballs, they suffer ability and may be unaware of the oscillation

A few of these men begin to notice apparent ment of objects and complain of headache giddiness and the like (Ophthalmologists offer no explanation of *the onset of this movement*) *Of miners receiving* compensation some remain at this stage, their subjective troubles are credited and their cases present little room for difference of opinion Additional "ocular" symptoms and signs such as blinking, blepharospasm, convergence on examination and night-blindness may be present, these are indistinguishable from phenomena familiar in war cases called shell-shock or neurasthenia

(c) In some cases the men complain of nervous symptoms whilst oscillation can be elicited only with difficulty Provided that oscillation *can* be induced, the case is generally accepted as calling for compensation

(*d*) Men with a previous history of it often show no oscillation, but are found to suffer from typical anxiety symptoms (phobias, &c), or others of an obsessional kind Even when severe these are often overlooked in the examination of the men, who rarely describe them spontaneously (Such symptoms are met with in private patients who come for treatment in circumstances where no question of compensation or material advantage can arise) If no oscillation can be elicited these men may or may not be judged fit subjects for compensation

The legal position is dubious and unsatisfactory, but can be excluded from the subject of treatment and it might be debated whether the syndrome should have been ascribed to oscillation of the eyeballs My own opinion is that the subjective movement of objects marks the intrusion of the psychoneurosis, the disability then behaves as a hysteria in guarding against the onset of further symptoms, with the disappearance of the oscillation these other symptoms arise

Mr Pooley's comparison with railway spine prompts me to observe that eminent surgeons of the nineteen-eighties regarded it as organically determined, just as we have till recently regarded the "neurasthenia" of nystagmus as due in some obscure physiological way to the oscillation Shell shock presents a similar history, in this example the psychologically minded physician or surgeon had first to demonstrate as Herbert Page did with railway spine, that the condition was a mental one, and then fight on another flank and defend the right of the men to treatment If, as I heard suggested more than once, every man with shell shock had been shot, then its incidence would have been much diminished, but the shooting would have been extensive and continuous If upon every psychoneurotic patient, whether a miner or a statesman, were forced the alternatives of work or starvation, then many who now go downhill would be saved by work, but many would starve and some would seek a speedier end

Personal experience of workmen's "traumatic neurasthenia," the equivalent of railway spine leads me to judge that some cases would never have developed in the absence of compensation, some could have been prevented by speedy recognition and common sense handling without specific psychotherapy, in other cases I have found decent men crying out for necessary treatment that was not procurable The situation in regard to miners nystagmus is the same In the absence of recognition of his condition and faced with the alternatives of going down pit or clinging to compensation, the best intentioned man may be forced by necessity to the latter choice I have sometimes ventured to advise a miner, whose compensation was in question that he was not suffering from any dreadful disease and that his symptoms would disappear more quickly with work He has gone down pit and returned to me later with a story of struggling on till a worse break down occurred than before Although conscious fear plays but little part in the ætiology of the disorder yet the depth below the surface the distance from pit bottom, the risk of falls and explosions (of which the safety-lamp is a constant reminder), the darkness, the heat and moisture, are conditions that few psychoneurotics could face and, indeed, powerful factors in the development of the disorder

As practical measures I urge better illumination, as much for its psychological as for its physiological influence, whatever improvements are possible in the amenities of coal-mining, the skilled investigation of every case at its onset, and—what is rarely carried out—the provision of work on the surface before the nystagmic miner deteriorates through idleness The attempt to force down pit, by stoppage of compensation, the untreated subject of pathological anxiety is bound to fail—I am, Sir, yours faithfully,

Queen Anne-street, W, Nov. 3rd MILLAIS CULPIN.

COLLES'S FRACTURE

To the Editor of THE LANCET

SIR,—Mr d'Abreu's letter of Oct 27th contains a condemnation of the use of Carr's splint which should not be allowed to pass unchallenged. Is he not condemning an approved method because he favours another? In their extensive survey of the results of treatment of Colles's fracture at King's College Hospital over a two-year period, H. C Edwards and J B Clayton (Brit Med Jour, 1929, i, 61) showed that Carr's splint, correctly used, yielded satisfactory results It is not however the only method employed; plaster or metal splints are used in those cases which require fixation in full flexion, as for example a fracture with complete separation of the radial epiphysis

In discussing after-treatment Mr. d'Abreu says, "As soon as the plaster is set *he* (the patient) must put on his coat unaided and light his first cigarette with *his* two hands" (italics mine) Of Edwards's 339 cases of typical Colles's fracture no less than 78 per cent were in women, the average age of these cases being a little over 60!

It is probable that the results obtained by a number of different hospitals using different methods are much alike, I therefore submit that a teaching hospital should adopt a method that students will readily employ, whether they take up hospital or private practice—I am, Sir, yours faithfully,

W MCN. NIBLOCK,

Nov 4th Surgical Registrar, King's College Hospital.

THE DETECTION OF THYROTOXICOSIS

To the Editor of THE LANCET

SIR,—In their very interesting paper in your issue of Oct 27th Dr Parkinson and Dr Hoyle quote Strouse and Binswanger, Moller, Morris, Biam, Collei, and Plummer who have reported cases of hyperthyroidism with the basal metabolic rate (B M R) within normal limits—taking the limit of normality as +15 to −15 Isolated B M R. determinations are however of little value in diagnosing these cases where the B M R. is within normal limits, by administering iodine in adequate amounts (180 mg or 60 minims of Lugol's iodine per day) for 8 to 14 days, and making observations of the effect it has on the B M R, they can be diagnosed with certainty. Iodine has no effect on the B.M.R of a normal person, but in the presence of Graves's disease or thyrotoxicosis iodine will always alter the B M R. in some manner It will follow one of three courses:

(*a*) Fall—commonest reaction;
(*b*) rise—rare; or
(*c*) fluctuate (fall and rise)—rare.

Many such cases have been observed by me and a good example is given below of a case of Graves's disease with the B.M.R within the lower limits of normality, a patient of Mr. Pearce Gould Middlesex Hospital.

Initial B.M R −8
After 8 days of iodine B M R. −27

In other words, −27 is normal for this pa —8 meant a raised B M.R By using the B conjunction with iodine, one of the most methods of determining the presence of thyro is obtained Strouse and Binswanger endea carry out this test in cases of goitre whose B lay within the normal limits and obtained inco results Their normal controls however, before and after the eight-day period, varied individually as −13 to +13, +8 to −6, +7 −7 to +6, +5 to −7, and so on. It is therefore *that the standards they had set* determinations of the B M.R were less stringe those necessary for the investigation of this p It must be remembered that if the metabol (M R) determined is the basal metabolic rate then this is constant and does not vary experimental error of the determination for a *individual over several years (except during* changes in climate from tropics to tempe and vice versa)

Many cases of toxic goitre with normal B have been reported. Although the B M R within average normal limits, it does not foll B M R. is not raised above the patient's Iodine in conjunction with the B M R whether thyrotoxicosis is present in these ca

I am, Sir, yours faithfully,

J D ROBER

Courtauld Institute of Biochemistry, Middlesex Hos
Nov 2nd

THE LOCAL GOVERNMENT MEDICAL OF ASSOCIATION OF ENGLAND AND W

To the Editor of THE LANCET

SIR,—We desire to make an appeal in your for increased support of this Association a history of over 65 years, as the Poor Law Officers' Association was in 1929 reformed present name Membership is open to p medical assistance officers at an annual of 10*s*, and it has been decided to institute a by which sympathisers who are not poor law officers may help it and receive news of its becoming "associate members" on a single p of 2*s* 6*d* to cover contingent expenses

The Association has always been in close with the British Medical Association, and supports it in its opposition to the employ whole-time public assistance medical officer the B M A, this Association believes th *employment of whole-time domiciliary offi* create a class distinction which is against the se of the times, by indicating that certain patie not only patients but paupers This Associa also in favour of the B.M A policy of free ch doctor in those areas where vacancies occur and the local profession has approved this form of The Association has representatives on the In Acts Committee and on the public assist committee of the B M A, thus ensuring close co *tion between the two bodies* Dr Alfred Co in his official position at the B M A. had long ence of coöperation with this Association a was for over ten years a poor-law medical offi consented to act as president of the Associati

This Association, which has done valua in the past in supporting and advising its m es that there is still a place for its activities, nly by giving strong support to the policy of M A, but by giving advice and assistance to mbers based on the personal experience of the ers of its council, who are all officers in the o of great experience Its secretary has a long intance with the legal problems which often n connexion with the service We trust to have upport of a large number of new members and ates Further particulars can be obtained from ecretary, Mr Frank Greenwood, Solr, 2, ury square, E C 2, and 150–152, High street, Newington, London, N 16

We are, Sir, yours faithfully,

Percy B Spurgin,
Chairman of Council
M W Renton
Hon Secretary Address The Bridge House Dartford
5th

THE UBIQUITOUS COLD

To the Editor of The Lancet

—I am grateful to Dr Leonard Browne for g up my point in the way he has, and I am in lete agreement with his headmistress's opinion could obtain the opinions of the headmasters r big public schools, both boarding and day, practical conclusions of real value might be ed Personally I believe that the rigid exclusion scholars during the acute stage of a cold would to raise the term average attendance in day ls rather than to lower it The faulty reasoning average parent, not to say the selfishness and me disregard for the welfare of the school, is ngly displayed in Dr Browne's quotation on't think *she* will come to any harm'"

I am, Sir, yours faithfully,

ley street W Nov 3rd Macleod Yearsley

To the Editor of The Lancet

—I think there are two difficulties in the way rming an adequate plan for the isolation of bearing pupils of day schools

The knowledge that, though you may minimise isk in the class-room, the boys and girls cannot escape infection in the tubes and buses In this way, isolation for colds is marked off from isolation for other infections which are legally notifiable by all, and therefore it is more difficult to enforce

(2) The tradition which regards the man or woman who struggles through his work, while suffering from a cold as heroic Which of us has not at some time or other said aloud or silently to himself "Fancy X stopping out for an ordinary cold! Why I stuck it out all last week with a much worse one"

Incidentally I may add that a policy of isolation, if carried on in schools but not by the public at large, would occasionally make the continuance of school well nigh impossible, as it would be by no means uncommon to have a quarter or even a third of the staff "down with colds" of varying intensity

I might add a third difficulty—I wonder if the headmistress cited has experienced any or all of them—that of amateur diagnosis Is one sneeze to be regarded as evidence of a cold? If it is not, the child will probably not be withdrawn till the cold is in full swing and the infection has already been communicated —I am, Sir, yours faithfully

Guy Kendall,
Head Master, University College School
Hampstead N W, Nov 6th

PS —The Association of Medical Officers of Schools should give a lead It is always so much easier if one can say, "The medical authorities insist on the necessity of such a measure"!

A DISCLAIMER

To the Editor of The Lancet

Sir,—Our attention has been called to a statement in the preface to the first volume of the "Principles and Practice of Neurology," by Drs Cannon and Hayes that "The third volume in course of preparation for the press will deal with neurological laboratory methods and includes contributions from" the undersigned We wish to state that we have made no contributions to this volume, nor do we propose so to do —We are, Sir, yours faithfully,

J G Greenfield, F Partnff,
E Arnold Carmichael, E J Wylie
Oct. 31st S A Mann,

OBITUARY

OUGLAS GAVIN REID, M B, Ch B Edin

r regret to learn the death of Dr Douglas Gavin , who will have been well known personally to of our readers when pursuing their medical es as Cambridge undergraduates

Douglas Reid received his medical education e University of Edinburgh and graduated as Ch B in 1905 His association with the bridge medical school followed promptly when Alexander Macalister secured his services as ant university demonstrator in anatomy, Reid g already held a similar position under ingham at his own school The association with anatomy school at Cambridge lasted till a few s ago when Reid resigned for reasons of health n at Cambridge he received the M A degree became a member of Trinity College His ces were employed as examiner for the Natural ces Tripos and for the M B degrees in the ersity He was a member of the Anatomical ety of Great Britain and made contributions to *Journal of Anatomy and Physiology* showing his ate knowledge of different sides of his science e one to one of his colleagues at Cambridge the wing notes on Reid's work and the influence that he exercised in the school "Reid was a highly strung, nervous man and in this way was adversely handicapped as a teacher, but no one could have any doubt as to his wide knowledge and firm grasp of his subjects His capacity for recognising the trend of a long complex exposition, and his aptitude in preparing an abstract were well illustrated in a summary of a paper on the evolution of limbs which he read at a staff meeting some ten years ago And if in published work on peritoneal folds he dealt with difficult problems offering few chances for brilliant discoveries, it would be gravely misleading to judge his intellectual attainments on these productions alone Apart from the usual work of a demonstrator in human anatomy, he was greatly interested in histology, and it is the more regrettable that circumstances did not permit of the perpetuation of the class in that subject which he conducted for two years Reid was also notable for his keen interest in local archaeology and his enthusiasm for outdoor exercise He made a remarkable series of photographs prepared in illustration of his studies of the fen landscape and of the architectural details of seemingly inaccessible fastnesses on the roof of Ely Cathedral He was a keen skater, devoted to lawn tennis, and at one period used to ride regularly"

JOHN LEWES TIMMINS, M.D., B.Ch. Camb.

THE death occurred in the Middlesex Hospital on Oct. 23rd of Dr. J L Timmins, who was a well-known practitioner in Acton He was born in Carmarthen in 1875, received his preliminary education at Bath College, whence he proceeded to Emmanuel College, Cambridge, and then to St. Thomas's Hospital for his clinical instruction He graduated in arts in 1901, as M.B in the following year, and in 1906 obtained his M.D. He served as house surgeon at the West London Hospital and as clinical assistant in the skin department at St. Thomas's Hospital, and was then for a time in the service of the P. and O Steamship Company, with which company he made several voyages Thirty years ago he went into general practice in Acton and soon became a member of the staff of Acton hospital. He took a keen interest in the affairs of the hospital, and was a member of the medical and house committees.

SAMUEL JOHN COLE, M.R.C.S.

THE death occurred at Bideford of Dr S J Co Oct. 27th at the age of 78 years. Dr. Cole was at Hartland, received his medical education London Hospital, and qualified with the double diploma in 1887. He was a prosector Royal College of Surgeons of England, and period was school medical officer for West Then for a short time he practised in Pento but eventually settled in North Devon Durin war, when age and health prevented him from intervention, he did good service by filling vacancies and helping to carry on the practi those of his colleagues who were on active For many years latterly ill-health patiently bo obliged him to curtail his activities Dr Cole large circle of friends in Bideford, Northam, neighbourhood, by whom his death will be regretted. He was unmarried.

PANEL AND CONTRACT PRACTICE

Misleading Headlines

Two provincial papers in summarising the annual report of the local insurance committee employ the headlines—

DOCTOR'S 4000 PATIENTS
SCHEME NEEDS REFORM

whereas from the article it is clear that this doctor is working with a partner and an assistant and that the reform to which reference is made is the provision of consultant services and the extension of medical benefit to dependants. The regulations are quite definite about the numbers of insured persons that doctors may contract for. A single practitioner working alone may have 2500 insured persons on his list. There will be times when he has 50 or so more or less, for on each day as it passes some will leave the area or change their doctor, others will come on to the list by attaining 16 years of age or moving into the area If this doctor employs an assistant to work in his practice, that assistant must join the medical list of the area and the principal may then add 2000 more names, or a total of 4500 as a maximum If two doctors are working in partnership and both on the medical list, then the two together may have 5000 insured persons A partner in this category must hold a share in the practice which is at least one-third of the share of any other partners The figures for the county borough in question indicate, as in other areas, that there are few practitioners with large lists of insured persons, the majority of lists are less than 1000. It should however be common knowledge that providing a doctor has an assistant there is nothing in the regulations against him having 4000 names on his list, nor has it been suggested by anyone competent to judge that this figure is excessive

Allocation of Insured Persons

In spite of the rules printed on the medical card and of the notices placed inside it when sent to an entrant, insured persons still frequently fail to select a medical attendant at all, and a large number only do so when being ill they need professional help This attitude is antagonistic to the principle of insurance. No insurance company would insure a house that is on fire, but fortunately for the public the medical profession has undertaken to provide attendance for such ill people as insured persons, no matter what the state of their health at the time, although the doctor attending need not accept them on his own medical list The panel committee for London some ti had this matter under discussion and decided the insurance committee to arrange that persons who had been resident in the area for a of three months and had not chosen a doctor be allocated to the nearest insurance practi The insurance committee thereupon arranged test to be made during the ensuing quarter to the extent to which allocation would be nece Steps were taken to provide the requisite data June 1st, 1934 Acceptances generally run in of three months, so that the figures from this would not really be complete until Sept. 30th, An interim test as at Sept 1st, 1934, show following result :—

Type	Total	Number who have not selected a doctor	Pe
New entrants .. .	5679	2582	
Re-entrants . .	1454	635	
Removals into London	251	98	

Experience shows that it is the habit of many titioners to withhold notifying acceptances quarter days (this is of course contrary to re which provide a period of seven days only). figures will therefore be substantially reduced made up to Oct. 1st The test was made in a of very low sickness incidence, when the need selecting a doctor is less apparent to the person. In a winter quarter the proportio acceptances secured during the three months fr issue of a medical card is likely to be much The figures do indicate clearly the ne such allocation and this will in future be do must not however be thought that the capitati for such insured persons are being lost to the prof Until a patient is on a doctor's list his capitat goes to swell the central pool out of which all in practitioners are eventually paid. According law of averages it should balance out, but it appears somewhat hard to the doctor to be a accept on his list for treatment at the contra an insured person who is ill at the time and been residing in the doctor's area for some three years The doctor has been at risk for th all the time, but his payment—a very small will be included in his share of the unallocated instead of the full capitation rate for the two years he has been quite well.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Milk-supplies to School children

LORD STRACHIE'S DIFFICULTIES

the House of Lords on Oct 30th Lord STRACHIE d attention to prices paid to producers of milk also to the deductions made by the Milk Board these prices, and moved for Papers. There he said, a good deal of dissatisfaction in the try amongst the agricultural community, and cially amongst dairy farmers, with regard to the on of the Milk Board. There was a matter h was making it difficult to get rid of the surplus. A great difficulty from which the farmers red was that they must sell all their milk to the d, but heavy deductions were made from the eeds because of the surplus milk which could not lisposed of, except at a very low price indeed. d been suggested that the milk should be supplied s a gallon for school children. The Board of ation had issued a circular letter and in that lar it was said —

> As the authority are no doubt aware, the Board der that the selection of children for free meals d *be made by a system of medical selection by the rity's medical officers, and for this purpose they* l regard it as proper that children should be selected show any symptoms, however slight of subnormal *tion*"

at paragraph *was to apply to the distribution of*. Apparently it would be necessary for the cal officer of health to examine all the children were going to have this milk to see if they were ring from lack of nutrition. Another paragraph e circular provided that the children were not t this milk if it could be shown that, though they suffering from want of proper nutrition, the nts were able to pay for it. There might be where the parents were able to pay but refused med to him unreasonable that the children should r in that way. There was another paragraph in ircular which said —

> he Board desire to urge that in areas where a supply fficiently pasteurised milk is available such milk d in all cases be provided. In other areas all pos precautions should be taken to ensure as far as icable the safety of the supply"

at seemed to him very reasonable indeed. But was another circular—he did not know whether me from the Board of Education or not—which eaded 'Scheme for the Supply of Milk in Schools ngland and Wales at Reduced Rates.' It said milk could only be supplied where medical rs of health sanctioned the milk. The medical r of health in some counties would only agree ilk being supplied to school children if it were urised, therefore it would mean that in a great cases no milk would be supplied to these en because it was impossible to pasteurise it. axter, the chairman of the Milk Marketing Board, ported to have said that compulsory pasteurisa would not be accepted because it would drive er-retailers out of business. It was said by the *Herald* that there were 5,000,000 children who supposed to be supplied with cheap milk here were only about 3,000,000 children who t get it, the reason being the difficulties that were to be raised by medical officers of health and ently too by the President of the Board of ation. So far as he could make out the chairman Milk Board was against pasteurisation, the ent of the Board of Education seemed to be our of it, and he did not know what the view e Minister of Health might be. He thought the Ministry of Agriculture would support in the view that it was perfectly ridiculous to on pasteurisation.

MINISTRY OF AGRICULTURE REPLIES

Earl DE LA WARR (Parliamentary Secretary) said Lord Strachie had referred to two circulars. The first, issued by the Board of Education referred to free milk in schools. The giving of free milk in schools by local authorities was not really seriously affected by this Government scheme, except to the extent that the local authorities were able to buy their milk in the future at half the price. He certainly read the circular in question as being an encouragement to local education authorities to administer the Act of 1921 as freely as possible. Some people might have preferred a drastic amendment of that Act, so that free milk in schools could be administered even more easily than at the moment but, short of legislation, the Board of Education had gone, he thought, a very long way in loosening up the administration. Lord Strachie had mentioned another circular in relation to this particular scheme and he was somewhat distressed that there should be a provision within that scheme insisting upon the approval by the medical officer of the supplies of milk to school children. The noble lord knew quite well that the moment those who were interested in the industry of agriculture attempted to do anything to increase the consumption of milk in the country they had some learned doctor writing to the *Times* telling everybody what a hopeless and poisonous beverage it was. Therefore he thought that Lord Strachie would agree that it was essential that they should do everything within the scheme to make sure that the medical profession was prepared actively to assist them, and so they put in their hands the approval of the supplies of milk to school-children. *He thought that that was really a very wise step.*

Lord STRACHIE said he did not think that Lord De La Warr had denied what he (Lord Strachie) had said that it seemed rather contradictory that in one circular the Board of Education should say that *where they could not pasteurise milk it would be* desirable that it should be treated in another way, or that they should have clean milk—and clean milk could be produced without pasteurisation or any other kind of treatment—while on the other hand, the other circular said that the local authorities that was to say, the education committees were bound to consult their medical officer of health whose word should be law. In a great many cases as one saw in the newspapers, medical officers of health said they would have no milk unless it had been pasteurised. If the education committees had not *given the ultimate decision to the medical officer of* health and had retained it in their own hands that would have been another matter. He hoped Lord De La Warr would try to remedy some of the grievances which he had attempted to point out.

Poor-law Bill

On Oct 31st in the House of Commons Sir HILTON YOUNG (Minister of Health) presented a Bill to amend the enactments relating to the relief of the poor in England and Wales so as to secure uniformity throughout Great Britain in the provisions relating to the disregard of sick pay, maternity benefit and wounds or disability *pensions*.

The Bill was read a first time.

Medical Refugees from Germany

On Nov 1st in committee on the Expiring Laws Continuance Bill

Major NATHAN said that during the past 18 months he had come into contact with those who had sought refuge from Germany in this country and he desired to pay a tribute to the Home Office for the way in which speaking broadly, they had received these unfortunate refugees, most of whom were Jews. But there was a special class of case about which he felt some difficulty—namely, professional men. He was thinking of a case of a medical man of world-wide reputation a man who was acknowledged by the profession in this country to be the leading authority in Europe in his particular line and to have been the pioneer in it. Yet he knew not for what reason the Home Office had found itself so far unable to grant that man the permission which he had sought to practise in this country upon the same terms and conditions as would be applicable to any other person not holding a British medical degree. The position of those who came from Germany to this country qualified as medical practitioners or surgeons was one of extreme difficulty and he should like to know what principle the Home Office was laying down for dealing with cases of that kind

Captain **Crookshank** (Under Secretary, Home Office), in reply, said that it was for any country to decide for itself whether it should grant the right of asylum to political refugees A large number of German refugees had been admitted in the last few years The Home Office welcomed the cooperation of Major **Nathan** and his committee in assisting them with this very difficult problem Plenty of refugees came here, but their admission or otherwise did not turn on their political or religious opinions. The paramount question that the Home Secretary had to decide in any instance was whether the presence of the particular refugee would or would not be in the interests of this country. That must override claims which any individual refugee, however hard pressed, might make.

HOUSE OF COMMONS

THURSDAY, NOV 1ST

Control of the Use of Atophan

Capt **Cunningham-Reid** asked the Home Secretary if, in view of the evidence of the professor of pharmacology at Birmingham University and the remarks of the Birmingham coroner at a recent inquest (see The Lancet, Oct 6th, p 782) as to the effects of the drug atophan, he would consider the scheduling of this drug as a poison — Sir J. **Gilmour** replied I am bringing the case to which the hon Member refers to the notice of the Lord President of the Council, and the Council of the Pharmaceutical Society, who are the authorities at present responsible for additions to the Schedule of Poisons.

Film Safety Regulations

Mr **Graham White** asked the Home Secretary if he proposed to make fresh safety regulations under the Films Act, 1909 —Sir J **Gilmour** replied · I am glad of this opportunity to state that the revision of the Regulations made in 1923 under the Cinematograph Act, 1909, has been under consideration for some time past The intention is to adapt the Regulations to present conditions, and one of the points to be dealt with is the relaxation in favour of slow-burning films of certain requirements necessary for fast-burning films No draft has yet been completed and it is, I think, scarcely necessary for me to add that before any new regulations are finally made full consultation will take place between my department and the different interests involved

Mr. **Graham White**: Is the right hon gentleman aware that there is considerable anxiety among education authorities and scientific bodies that these regulations would preclude them from carrying on these useful activities, and may I assume that his answer covers consultation with such bodies?

Sir J. **Gilmour** Oh, yes; certainly

Card-room Workers and Fibre Dust

Sir **John Haslam** asked the Home Secretary if he had considered the advisability of scheduling card-room workers under the existing Workmen's Compensation Acts so that such workers incapacitated, either partially or totally, as a result of inhaling fibre dust, should be entitled to compensation —Sir J **Gilmour** replied · Yes, Sir, this matter has received my full and sympathetic consideration There would be great difficulties in meeting the position by adding to the schedule of industrial diseases under the Workmen's Compensation Act, having regard in particular to the absence of any special clinical features which would enable the lung condition of the workman to be diagnosed as due to the dust, but I have written to the Employers Federation urging them to some special scheme and suggesting that they arrange for an early meeting of representatives sides to explore the problem further

Mr. **Rhys Davies**. While the right hon gent negotiating with employers will he again look possibility of including these sufferers within the of the Workmen's Compensation Act, so that not have to rest in the end on any charitable by employers?

Sir J **Gilmour** We are looking very carefully aspects of the problem

Water-supplies

Mr. **David Grenfell** asked the Minister of if he had any statement to make on the present of the water-supply —Sir **Hilton Young** replied average rainfall for September was above the but October has been dry, particularly in the and the South. Returns received from water show that the position generally is better than the summer, and that where shortage exists or is remedial measures have been taken by provi tional supplies or by economies in consumption. undertakings generally have the situation in hand, that where necessary consumers continue to by reasonable economies in the use of water Th been no serious curtailment of supplies in urba except in a very few instances In rural areas the need for permanent supplies is being met with of the Government grant A large number have already been passed for grant, and authorities expedite any schemes which they propose to pu

Reports on Maternal Mortality

Mr. **Paling** asked the Minister of Health wh was aware that the annual report of the chief officer of the Ministry for 1933 showed that the of eight counties, seven county boroughs, and five politan boroughs had sent no confidential maternal deaths to his department, whether taken any steps to obtain such reports from authorities; and what action, if any, he had regard to authorities which had furnished did not include any comment or interpretat showed no evidence of careful investigation such regarded as essential by the chief medical offi **Hilton Young** replied. The answer to the of the question is in the affirmative As second part I have no power to require the of such reports, but every opportunity is taken upon the local authorities the importance of co in the desired inquiries With regard to the of the question, I am informed that, even in cas the reporting medical officer does not feel ju furnishing any comment on, or interpretation facts disclosed, the reports do not necessarily lack of careful investigation I may add that the officers of my department who examine the the advantage of the advice of two consulting whose services have been retained for the purpo

MONDAY, NOV 5TH

Disposal of London Refuse

Sir **Cooper Rawson** asked the Minister of whether his attention had been called to the report of the cleansing subcommittee of the M Boroughs Standing Joint Committee on disposal and whether that committee in accordance with of reference inquired into up-to-date systems outside London —Mr **Shakespeare** (Par Secretary to the Ministry of Health, replied hon friend is aware of the interim report He that the committee as a whole confined the inspection of the services of the Metropolitan Councils, but several of the members, and a officers who advised the committee, had inspe date systems in operation outside London The of the subcommittee is a civil engineer, and the subcommittee has attached to it, in an capacity, a number of medical officers of engineers of Metropolitan Borough Councils omparative methods of controlled tipping and ation, my right hon friend is advised that where lled tipping can be and is properly carried out it is factory method of disposal, but what method is lvantageous for any particular place must depend l circumstances

Poisons Licences

OHN WARDLAW MILNE asked the Home Secretary r any decision had been arrived at in regard to the il that poisons licences should not be granted to ural and horticultural tradesmen in connexion ne sale of insecticides, weed killers, &c —Sir J R replied The question of the control to be ed to the retail distribution of poisons used in lture and horticulture is among the matters at l under examination by the Poisons Board I land that the Board have invited the observations ciations of manufacturers, traders, and others ed upon a draft of the proposals to be later ed to me, and will proceed to consider their endations when all the observations have been

TUESDAY, NOV 6TH

Safety in Mines

PENCER asked the Secretary for Mines whether d make a statement with regard to recent develop nd progress in the safety training of boys employed bout coal mines —Mr L BROWN replied During ning school sessions 1933–34 courses of safety on for pit lads were held at about 200 centres 00 boys were enrolled and about 5200 of them completed the full course At nearly all the centres safety badges or certificates to the total number of about 5000 were awarded to boys who qualified in an oral examination conducted by a panel of independent examiners Meetings for the public presentation of these awards were held in the locality or at the Buxton research station As regards the new session which commenced this autumn, I am not yet in a position to give full information as to the numbers enrolled, but every effort is being made, with the coöperation of all sections of the industry, to develop this important work still further, and I confidently expect a substantial increase in the number of classes, more particularly in South Wales and Scotland

Medical Practitioners and Pension Claims

Mr HALL-CAINE asked the Minister of Pensions whether, in view of the number of cases which frequently arose where pension claims were refused on the ground that the opinion of the local medical practitioner as to the attributability of a man's condition to his war service had been overruled by the medical advisers of his department, he would consider the desirability of setting up a panel of medical referees who could provide an independent expert tribunal to settle such cases —Major TRYON replied My responsibility to Parliament would not admit of my delegating the power of decision in the manner suggested by my hon friend, but I would remind him that arrangements are in force which enable me to obtain the independent advice of eminent specialists, nominated by the presidents of the Royal Colleges of Physicians and Surgeons, in cases which present serious doubt or difficulty on the evidence

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MEDICAL NEWS

ity of Oxford

llowing have been nominated or renominated as rs in medicine for two years from the beginning of erm, 1935 Anatomy Prof W L Le Gros Materia medica and pharmacology Prof J A Pathology Dr E W Ainley Walker Forensic and public health Dr J F Taylor Surgery lax Page Dr H P Gilding has been appointed in physiology in the first examination for the

the illness of Sir Farquhar Buzzard the regius of medicine, who is suffering from typhoid fever rrespondence intended for him should be directed J A Gunn at the department of pharmacology

xt award for the Radcliffe prize will be made next he prize, which is of the value of £50, is awarded aster and fellows of University College for research ch of medical science and is open to all who have d, or are proceeding to a medical degree in the y and have not exceeded 12 years from the date the last examination or the degree of B A

lectors to the professorship of pathology will roceed to elect a professor in the place of the late ges Dreyer Candidates are asked to apply in rm before Dec 22nd

ity of Cambridge

3rd the following degrees were conferred —

Arnold Barnsley Alan Eckford and W E Coleman
nd B Chir —E N Bevan H B May James Metcalf
ngton and R L Henton
F N Ratcliffe
—J H Conyers

School of Hygiene and Tropical Medicine

neth Mellanby, Ph D , has been appointed to the rth scholarship for research in tropical medicine rship is tenable for two years

xt series of five lectures and demonstrations on ygiene which are intended for men and women e medical profession proceeding to the tropics ven by Lieut Colonel G E F Stammers and lm Watson, from Dec 10th to 14th The and other particulars can be obtained from ing secretary Ross Institute of Tropical Keppel-street Gower-street W C 1

English Conjoint Examining Board

At the final examination of the board held from Oct 1st to 19th, the following candidates were approved in the subjects indicated below, but are not yet eligible for diplomas

Pathology —M Adel St Bart s S N Ahmed, Birm D O Allen Camb and King s Coll F L Allen St Bart s , D F W Anderson Lond , W J C Anstie Oxon and St Thos H R Arthur, St Thos , S O Aylett King s Coll , L J Bacon Camb and St Bart 's, G Bair King s Coll , D R Balcombe Brown Oxon and St Thos , P H Ball Camb and St Bart 's G S Barradell-Smith Middlesex S M Basu Rangoon , T L S Baynes, St Bart s M S Becker Manch S H Bloom St Bart s T M Boyle Leeds A C Brewer Livrp L D Brice Manch A F Bryson Camb and Lond ; J A B Burnett Charing Cross , J A G Carmichael, Guy s , R S Carpenter Lond , J N Cave Camb and St Thos ; P W Clarkson Guy s J G Clothier King s Coll , B Cohen Charing Cross , J H Coles King s Coll , J I Collis Birm , T K Cooke Leeds , L Cooperman Witwatersrand , R W Cope and H M Curtois Guy s Debora David Royal Free R B Davis Lond L D P Diamantis and C W Dixon King s Coll H K Doctor Bombay and St George s R C Dolly St Bart s L W Dorrell Camb and St Bart 's, J W Doupe Guy s C A Dowding Camb and King s Coll C M Dransfield St Bart s A K Drennan Livrp , G W N Dunn Camb and St Bart s , F P Ellis Manch , D M Evans St Bart s , J R L Farquhar Camb and St Bart s J S Feynman Middlesex , W J Fitel Guy s J French and L D B Frost St Bart 's, R T Gath Camb and St Bart s G L Gale Birm F Gareh Guy s J G Garman Birm J G Gladston St George s C J Gordon Camb and St Bart s, C N Goose Camb and St Mary s W F Hadden and J T Halkett St Thos , P H Hanbury Guy s , C Hardwick Camb and Middlesex D T K Harri St George s , M J Harris Guy s , W N I Hayes St Thos , R B Helsh Middlesex N J P Hewlings Camb and St Bart s , C C Houghton Birm, G Houghton Brown St George s H M Hugh St Bart s W Hughes Guy's, R S Hunt St Bart s N W Irish Guy s , J C O Jewesbury Oxon and St Bart s L H Jones Guy s W H Jones Camb and Univ Coll , R S Joseph St Bart s J J Kay, Manch T H Kendrick Birm I Kirby King s Coll J H Lamb St Thos , W A Law, Camb and Lond ; H T Laycock Camb and St Thos P H Leston Camb and [illegible] J J Lieberman, Glasg , H S Lisa Middlesex M [illegible] Charing Cross P S [illegible] St Thos J D [illegible] Witwatersrand and Guy s L N G Lutton Camb [illegible] Margaret I McHafie Royal Free [illegible] C W Maisey, St Thos , A R Marshall [illegible] [illegible] M S M [illegible] [illegible] [illegible] W T M Moir Lond [illegible] R J [illegible] St Thos C H [illegible] [illegible] [illegible] St Mary s [illegible] H [illegible] [illegible] St Mary s , J H Neal Westminster [illegible] W D Park, St Bart s , W Parker Livrp [illegible]

St Thos ; G E Paxon, Guy's , A L Peers, Camb and Guy's ; A D Petro, Camb and St George's ; E H D. Phillips, Camb and St Bart.'s ; G W. Phillips, Birm , G. B S Pimblott, Westminster , E E Pochin, Camb and Univ Coll , G Pollac, St Mary's , A E K Price, Middlesex , J. S Price, Birm ; A R Pritchard, Liverp , S A Qadri, Birm , J D Raftery, St Mary's , J L Reid, Oxon and Middlesex , D. T Richards, Cardiff , E P Rigby, St Bart 's , J M Robins, Camb and St Bart 's , R E Rodgers and J R Rose, Camb and St Thos , J K Samuel, St Thos ; V Sankarambal, Royal Free , R S. Saxton, Camb and St Bart 's , D. S Scott, Camb and Lond ; C Segalov, King's Coll. , H J Sherren, Camb and St Thos , R A Shove, Birm , A R Sibbald, Liverp ; M Q H Siddiki, Leeds ; B N Sinha, Middlesex , J A. H Smart, King's Coll , A Smiter, St Mary's ; I Slome, Lond , S J. Stein, King's Coll. , J. M Stewart, St. Bart 's , N K Stott, Oxon and St Thos , J. S Stuart, Guy's , J F E Stuhl, Camb and Westminster , K. Tatz, Guy's , J D B Valle, St Thos ; T H Taylor, Bristol ; Mary R. Thompson, Leeds ; R L. Tiruchelvam, Singapore and West Lond ; R F. Townsend, Westminster , Constance M Vallange, Royal Free , P W. Vilain, King's Coll , J E G Vincenzi, St Thos , B W. Walford, Birm , A Wardale, King's Coll. ; J S J F W. Wallace-Collett, Lond , W. Warren, Camb and St Bart 's , Elizabeth H. Western, Camb. and King's Coll , and J Yatawara, Ceylon and West Lond.

Medicine —M Adel, St Bart 's , Ada Aspinall, Manch , L J Bacon, Camb and St Bart 's , A H Barwell, St George's , T L S Baynes, St Bart 's , Brenda G Billings, Royal Free , A. P Booth, Lond , P I Boyd, Univ. Coll ; H. S Brodribb, Oxon and St Bart 's , Freda M Chalkley, West Lond , W E Clarke, Charing Cross ; M Cohen, King's Coll ; S Cohen, St Bart 's , R W Cope, Guy's , F. F Croft, St Bart 's , W J. F Davies, Cardiff ; C W Dixon, King's Coll , H K Doctor, Bombay and St George's , G. W N Dunn, Camb. and St Bart 's , H L Ellis, Middlesex ; W. E F. Evans, St Bart 's , C S Ford, Middlesex , J H Garnett, Manch , J. Geller, Westminster , P Glazer, King's Coll , C J Gordon, Camb and St Bart 's ; A A Hakeem, Bombay and Manch , W. N L. Haynes, St. Thos ; R B Heisch, Middlesex ; J J V. Hopkins, St Bart 's , C W Hutt, Camb and St Bart 's , E L Kirstein, A H A Koi, and A M Lasnick, Univ Coll , D Levine, Cape and St Bart 's , J F Lockwood, Guy's ; H M McGladdery, St Bart 's , Margaret I McHaffie, Royal Free , M S Marks, Glasg , R L Mehra, Punjab and Lond ; R S Morris, Camb and St Thos , A Mukerji, Middlesex , S Phillips, King's Coll ; T S Protheroe, Guy's , Cecilia E M. Rath, Punjab and Royal Free , E P Rigby, St Bart 's , J M. Robins, Camb and St Bart 's , Eileen G Rose, Leeds ; S V. Sansom, St Bart 's , J H E Summerhill, Camb and Univ. Coll , R. H A Swain, St Bart 's , Phyllis J. M Sykes, Univ. Coll ; C Tetlow, Manch , R L Tiruchelvam, Singapore and West Lond , J R de V Toussaint, Ceylon ; J E G. Vincenzi, St Thos , Margaret C Winter, Liverp , and A R. Yates, Lond

Surgery —B Agranat, Guy's , H R Arthur, St Thos ; S M. Basu, Rangoon , R Bevan, Oxon and St Thos , M H. Bob, St George's ; G L Bohn, St Bart 's ; A S Bookless, Camb and Guy's , B B Botha, St Bart 's , S G Brook, Camb and St Thos ; H G Cereseto, St Bart 's , B Cohen, Middlesex , J. H Coles, King's Coll , W. T Cooke, Camb and Birm ; L Cooperman, Wits'rand ; E C Cordeaux, Middlesex ; L M Curtiss, St Bart 's ; Annys M Cusack, Univ Coll ; F. C Durbin, St Thos ; G B Ebbage, Guy's ; G A. Ewen, Camb and St Bart 's ; Annie Fidler, Manch , Barbara J. Fisk, Royal Free ; J R Forbes, Guy's , A H. T F. Fullerton, Camb. and Birm. , C E Garson, West Lond , J L Gordon, Middlesex ; J. A G Hair, Univ. Coll , E I B Hawes, St George's ; G W. Hearn, St Thos , T C Henry, Middlesex ; B P. Hill, Manch ; T. H Hills, Guy's , K F W Hinson, St Mary's ; D W. Hoodless, Charing Cross ; C S Humphries, Camb and St. Thos ; M R Kark, Guy's ; R Kauntze, Camb. and St. George's , G H W. Keates, Guy's ; A A Khan, Lond , A H A Koi, Univ. Coll ; F B Lake, Guy's , W. Libertson, St. Bart 's , H S Lillie, Middlesex , A T Marrable, St Thos , J. Marshall, Lond , Ellen Mayer, King's Coll ; D F. E. Nash and J G. Nel, St Bart 's ; A R H Oakley, Middlesex ; C W. F. Outred, Guy's ; A Pearlman, Middlesex , J. B Phillips, Cardiff ; G Pollack, St Mary's ; J Revans, Middlesex , H D H Robinson, Univ Coll , E Rosenberg, Guy's ; H. N. Savage, Manch ; P N Shutte, St Thos , A H M Siddons, St George's, B N Sinha, Middlesex ; N K Stott, St Thos , R H Taylor, Camb and St Mary's ; B M Truscott, Middlesex ; A A. Wailer, Guy's ; M Watkins, St Mary's ; E T Weekley, Camb and St Thos ; J S H Wilson, St Bart 's ; J Yatawara, Ceylon and West Lond , and J G Youngman, St Bart 's.

Midwifery —A W Abramson, Camb and St. Thos , H L. Ackerman, Lond ; S N Ahmed, Birm ; S G Alavoine, Lond , D G Allen, King's Coll , I C Allen, St Thos ; H F. Anderson, Camb and St George's ; A C Ashton, Manch ; S O Aylett and G Bair, King's Coll , D S D Barber, St Bart.'s , H D. G Barnes, Lond , S M Basu, Rangoon ; P. W G Baxter, Guy's , R D I Beggs, Middlesex ; Brenda G Billings, Royal Free ; G Blackburn, Camb and St Bart 's ; A C Blandy, Camb and Lond , G L Bohn, St Bart 's , P. I Boyd, Univ. Coll , T M Boyle, Leeds ; W. G. Brander, Camb and St Thos , J P Brazil, St Mary's , E A E A Brown, St Mary's , K P Brown, St Bart 's ; Kathleen E Burnell, Royal Free , J A G Carmichael, Guy's , W W Cashmore, Camb and Guy's ; J N Cave, Camb and St Thos , J H. Caverhill, St Thos , R G Chapman, Guy's , L J. Clapham, St. Mary's ; P W Clarkson, Guy's , P E G Clements, St Bart 's , C D Coode, Oxon and Lond ; L Cooperman, Wits'rand ; G F Crickmay, St Thos , R N B Cridland, Oxon and St Mary's ; G Dalley, St Bart 's , R D L Davies, Middlesex ; R B Davis, Camb and Lond ; J G B de Vine, St Bart 's ; P R Dias, King's Coll ; H K Doctor, Bombay and St George's ; G A Ewen, Camb and St Bart.'s ; Dora J B Falconer, Royal Free , I. A Feldman, Leeds , J S Feynman, Middlesex ; W. J Finegold, Charing Cross ; J W Westminster ; R Fleming, Geneva ; R J F St Bart 's , M. Gaba, Cardiff , L R. Gardner Middlesex ; E Gareh, Guy's , C. E Garson, We J G. Gladston, St George's , J A. J Hamm D R Hanbury, Middlesex , P B Hanbury, Guy' Harcourt, St Thos ; C Hardwick, Camb and D T K Harris, St George's , C W. M. Harvey, St G. W Hayward, St. Bart 's ; R J. House, Middlesex, Hunt, Univ Coll. ; R F. Jarrett, Camb and St J D Jenkins, Middlesex ; D. V. John, Camb and H D Johnson, Camb. and St Thos , I. Joseph, Car Joshi, Bombay , G H W. Keates, Guy's , A R St Bart 's ; J. R Kerr, Camb. and St. Thos , K. C. Manch , E H. Kitching, Leeds ; F D W. Knight, St M J. Lange, Guy's , D. C Lavender, Camb and W. A. Law, Camb and Lond ; J H Lawrence, Un H T. Laycock, Camb and St Thos , F H Lee, Guy' Leech, Camb and Lond ; J. Lefcovitch, Middlesex ; Leggett, Guy's ; P H. Lenton Camb and Middlesex Levi, Leeds ; C A. Lillicrap, Guy's , I W and Lond ; A. C Maguire, Charing Cross , W. N P E C Manson-Bahr, Camb and Lond. , J. Marsh N. E Mawby, Liverp , H S Mellows, Camb and King W. J. Mitchell, Guy's ; R J. Murphy, Sheff , M. L and D F E Nash, St. Bart 's ; S H Navidi, Bombay , O'Flynn, St Mary's ; D A O'Reilly, St Thos , W Westminster , N O Paterson, Guy's , E E Pochin, C Univ Coll , O D Popat, Lond ; F O. Potter, G Prothero, St Bart 's , J. D Raftery, St. Mary's , Ce Rath, Royal Free , G R Rawlings, Camb and St W. M Rich, King's Coll ; J. S Richardson, M. S Richmond, Leeds , R E Rodgers and J R Rose and St Thos , Jean Ross, Univ Coll , E B Row K C Royes, Oxon and St Thos. , P W. D. Russell, St J P. Salkield, Univ Coll , A. E. K. Salvi, Guy's, Sargentson, Camb. and St Mary's , C W. A. Searle and King's Coll , C Segalov, King's Coll ; S K. Se H S Sharp, Camb and St Thos , H Silman, Leeds Simmonds, Camb and St Thos ; I. Slome, Lond Smith, St George's ; J E Spalding and J B Spe A D Stammers, Camb and Lond. ; S J Stein, Ki D P Stevenson and J S Stuart, Guy's , J Suchet, S G R. Taylor, St Bart 's ; H C. Thomas, Lond. , C Van der Post, Guy's ; P. W. Vilain, King's Coll , A. A Guy's , H J Wallace, Camb and St Thos , A King's Coll ; W Warren, Camb and St Bart 's ; C and C. E G Wickham, St Thos , P B Willan, E D H. Williams, Guy's , Margaret C Winter, L A C Wood, Camb and St Thos. ; and P L Young, St

Royal College of Surgeons of England

Application is invited for the post of pat curator of the museum of the college, and partic be found in our advertisement columns No appointment to the curatorship has been made death of the last holder, Mr C F Beadles

On Dec 13th the council will proceed to the of a member of the court of examiners

Lodging-houses for Women in London

An appeal for more Cecil Houses for homeless in London will be made next Friday afternoon, at 3 P M , at Daly's Theatre Sir Thomas Beec preside, and Mr. Aldous Huxley, Miss Mary Be Mr James Laver will speak from their own know the work Each lodger at one of these houses nightly for a good bed, hot bath, hot tea and night and in the morning—with no questio Lady Hardwicke, Mrs Cecil Chesterton, Major Cohen, and Mr. D G Somerville, M P , will als support of the appeal Tickets for the meeting had free from the hon organising secretary, Cecil Inc , 11, Golden-square, W 1.

Fellowship of Medicine and Post-Graduate Association

Dr. A E Clark-Kennedy will lecture at the Society of London, Chandos-street, Cavendish at 2 30 P M on Nov 13th, on herpes and ence on Nov 20th on obesity On Nov 14th Dr W will speak at 8 30 P M , also at the Medical So diet of the obese and thin Forthcoming gynæcology, at the Samaritan Hospital, Nov 18th , proctology, at St Mark's Hospital, to 24th , rheumatism, at the British Red Cro Peto-place, on Tuesdays and Thursdays, at Nov 20th to Dec 6th ; infants' diseases, at Hospital, Nov 26th to Dec 6th , dermatolo Blackfriars Skin Hospital, Nov 26th to Dec diseases, at the Brompton Hospital, on Wedne Fridays, from Dec 12th to Jan 11th Course tion are open only to members and associa Fellowship, and further particulars may be the secretary of the Fellowship, 1, Wimp London, W 1.

of Wales's Hospital Club

annual dinner of this club will be held at the dero Restaurant, on Thursday, Nov 22nd, at 8 P.M., Dr Lewis R Yealland will occupy the chair Dr m H Jones, 47, Queen Anne street, London, W 1, honorary secretary

een University Club, London

ninety-second half yearly dinner of this club will d at the Trocadero Restaurant at 7 30 P.M. on day, Nov 22nd, under the chairmanship of Mr Morrison, LL.D, M P The secretary may be sed at 16, Tregunter road S W 10

rsity of the Witwatersrand

Oct 9th, at Johannesburg, the degree of D Lit (hon s was conferred on Dr C Louis Leipoldt, F R C S, of the *South African Medical Journal*, in recognition contributions to Afrikaans literature

Abattoir Society

Benjamin Ward Richardson memorial lecture of ciety will be given on Tuesday, Nov 27th at M, at the Royal Sanitary Institute, Buckingham road, London, by Sir Leonard Hill, F R S His will be Electric Methods of Producing Humane er Sir James Crichton Browne, F R S, president society, will preside No tickets will be required

ical Society of the Irish Royal Colleges

his society's first meeting for the session, Dr F J ell, the president-elect, read a paper entitled a Yesterday and To-day, in the course of which ocated the establishment of special hospital units diagnosis and treatment of the anæmias In ing a vote of thanks Prof T G Moorhead spoke heed for an extension of social work in connection e Dublin hospitals, and also defended the scheme lgamation of the smaller Dublin hospitals

es on Research and Development

year the British Science Guild began a series of intended to direct public attention to the ance of scientific research and the utilisation of its in the service of mankind The managers of the Institution have agreed to coöperate with the of the Guild in the arrangement of a further ame of four lectures which will be given at emarle-street London, W, on Wednesdays, at as follows Nov 21st, Mr C C Paterson on the ion of the Electron, *Dec 12th, Mr G W C* D.Sc, on Sound and Noise, Feb 6th, 1935, *Prof* Desch, F R S, on the Microscope and the Metal ies, and March 6th, 1935 Sir Frederick Keeble, on the Fertility of the Earth

rwood Hospital Transferred

ov 2nd Lord Loch, on behalf of the United Services handed over the title deeds of the Heatherwood l to Dr Somerville Hastings, chairman of the hospitals and medical services committee who l them on behalf of the Council Dr Henry n in addressing the company, spoke of this noble the benefit of London's children and paid tribute ractical idealism shown by Sir Frederick Menzies upport of any proposal for the care of the health on people The hospital, which was established for children suffering from surgical tuberculosis er orthopædic diseases stands in 53 acres of and consists of three ward blocks, one for children sexes up to the age of seven, and one each for l boys over that age There is an up-to-date ray nt block and workshops in which are made all nts and surgical appliances required At present accommodation for 130 patients which is now to ased by 100, preference being still given to the of ex-service men and women The hospital has school recognised by the Board of Education The n of the special hospital committee is Dr S W nd Miss V Needham chairman of the hospital ame of its transference has accepted a seat on mittee A fortnightly clinic in London under after-care of ex-patients living in or near the lis

Queen to Open Hospital Extensions

The Queen has consented to open the new block of the West Norfolk and King's Lynn Hospital early in February.

Royal Sanitary Institute

We have received particulars of the next exhibition of this institute to be held at Bournemouth in July 1935 in connexion with the annual health congress Further information may be had from the secretary at 90, Buckingham Palace road, London, S W 1

British College of Obstetricians and Gynæcologists

Dr J S Fairbairn presided at the fourth dinner of the College, held at Claridge's on Monday evening, when Mr Stanley Baldwin was the chief guest It was said Mr Baldwin, his wife's interest in the National Birthday Trust Fund which had brought him there He asked leave *to set out not so much for his immediate* hearers as for a wider circle, his own knowledge of why the College was founded and what it hoped to do What one Royal College *does for medicine and another for* surgery that was what the new college should be doing for obstetrics, and the need for some body to speak with authority, coming at the same time as the quickening of the national conscience about mortality in childbirth led to its foundation Half at least of that mortality was preventable, but like deaths on the road deaths in child birth had been taken as a matter of course and quite apart from this death rate, the results of neglected childbirth filled 30 to 50 per cent of the beds provided for women in hospital wards throughout the country The time, he said, was more than ripe for some concerted effort and he foresaw two lines of fruitful work for the new College, (1) to keep up standards (2) to organise research There might, he thought, be some factor in maternal mortality which had as yet eluded their search, and speaking as President of the Council he said nothing could be more agreeable to him than the prospect of a close association between the College and the Medical Research Council He wanted to see the day come when the best form of anæsthesia was within the reach of every parturient woman and within the reach of the midwife attending her He concluded by congratulating Dr Fairbairn in leading the destiny of the College at such a time

Dr Fairbairn in reply attempted what he called a quinquennial assessment of the rateable value of the College Few of those who sat in the early councils he said, were optimistic enough to think of its early acceptance The possession of a house which the College owed to Lord Riddell, had raised it in its own esteem There was, he said, in the mind of the founder and of his associates the will for public service but the early years had inevitably been occupied with internal organisation The blood of the Royal Colleges in their veins was impelling them to do what they could for education, while at the same time they were following the old Obstetrical Society of London which for thirty years had examined and laid down rules for midwives before ever the Central Midwives Board came into existence It was he thought this society more than any other body to which should be given credit for the maternity services throughout the British Isles as they now knew them The first new work of the College was the institution of a diploma to qualify general practitioners especially in the so-called black areas, to practise midwifery and to give them the necessary post graduate experience In regard to painless labour he spoke with feeling of the President of the C M B ground between the upper and lower mill stones of divergent opinion those who would entrust the midwife with any available anæsthetic and those who hesitated to place dangerous weapons in the hands of women not qualified to use them What was needed was a scientific clinical test on a large scale for the method adopted trust to be without increased risk for mother or child The College with its many contacts with hospitals had accepted an invitation from the National Birthday Fund to report on the hospital investigations, for which the Fund was to pay There would be a representative of the Medical Research Council and of the anæsthetists on a central ad hoc committee which would hold [illegible] meetings at the College to review reports as they came in [illegible] [illegible] only, they would try all methods in turn on at least 10,000 cases for a minimum of six months Having found out what methods were suitable for the home they would try them out there On his way to Melbourne next year Dr. Fairbairn said he would be visiting Canada and New Zealand and discussing with them how best to help men coming over for post-graduate work. But when fully developed the College was likely to remain a small society; not more, he thought than four hundred fellows and members

Prof. G C. Lowry proposed "The Guests" with incredible felicity, welcoming especially the honorary fellows, Prof A. Donald and Sir William Smyly, and expressing gratitude to the medical press, "those unshorn Samsons," for effective help given at the inception of the College In response, Sir George Buchanan, who assumed (quite unjustly) that he was chosen at hazard to reply, spoke of points of contact even between an outsider like himself and the work of the new College. In 1911 he had spent six months inquiring into the maternal mortality in different parts of the country and had himself drafted the "magnificent diagram" in the L G B report for that year Now, as Master of the Apothecaries he was arranging the post-graduate diploma designed by the society for the assistance of maternity and child welfare clinics

British Medical Association: the Council Dinner

On Tuesday, Nov 6th, a dinner was given by the Council of the British Medical Association in the Association House, Dr. E Kaye le Fleming presiding.

After the royal toasts had been drunk Dr le Fleming proposed the toast of the immediately Retiring Officers, reminding the audience also of such men as Dr. Willoughby, of Eastbourne, the first medical officer of health to become president of the Association, Lord Dawson of Penn, who was associated with the centenary celebrations, and Dr Alfred Cox, medical secretary of the Association from 1912 to 1932 He coupled with the toast the name of Sir Henry Brackenbury, chairman of the Council from 1927 to 1934, paying eloquent tribute to the work he had accomplished during his term of office

Sir Henry Brackenbury commented upon the changed outlook of the profession in the last ten years, and pointed to the part that preventive medicine was playing in the life of the modern practitioner who was, he said, no longer content to cure disease but who paid more attention to its prevention in the first instance, with particular reference to the daily environment of the patient "Medicine has to be a social service as well as a science and an art," he said, an aphorism which drew applause.

Prof R. J A Berry proposed the toast of the Common Health. The laws of nature, he said, were still, as they always had been, the ruling factor in daily life and, in respect of the survival of the fittest, medicine, which in epidemic disease is more effective in prevention than in cure, had played a great part During the middle ages plagues of all kinds ravished humanity, and the community's debt to medical science in ridding this country of them cannot be over-estimated The common health was of prime importance, and the British Medical Association would continue to do what it had done in the past to promote it

Sir Edward Hilton Young, Minister of Health, in reply, said that the general practitioner no longer had to deal with disease by himself but could call in the aid of laboratories and research workers While the nation's health was indeed its greatest asset, and while so much had been done and was being done in this general field by medical science, there was one particular subject which he thought should engage special attention, and that was maternal mortality. The State had achieved certain results by pressure, he said, and on those results a fresh drive was being put forward The problem of the responsibility of the State for the mother at childbirth could not be overlooked, and the authorities responsible have been invited to push ahead to make the services concerned equal to any other State undertakings. He emphasised the value of post-graduate education for doctors, for as the foundation of the medical service of the country must be the medical practitioner, every facility should be given to him for furthering his education when student days are over.

Mr. H. S Souttar proposed the health of the guests, and Sir George Truscott, replying on behalf of Mayor of London, made interesting mention of in the City, alluding to references to m occurred in the City records as early as 1300 occasion to thank Dr. Charles White in particul valuable work in prevention of entry of disease the Port of London. Dr Robert Hutchison als

Dr R G Gordon proposed the toast of the who in reply said that the first duty of the As was to protect the interests of its members jected trip to Australia was being undertake view to the Empire-wide connexions of the A the tour was intended to stimulate medical to share professional experiences The furth public interests was the principle, he asserted, foremost in the deliberations of the British Association

Maternal Mortality Committee

Lady Denman presided with great good a stormy delegate meeting called by the Friends House on Tuesday afternoon She that the good records obtained in certain for instance in the practice of the Queen's be taken as an indication that a high matern rate need not be regarded as a necessary evil fold resolution, which formed the main subject cussion, welcomed the encouragement Circular 1433 to local authorities to maintain and maternity and child welfare services, but, by reports of malnutrition among women, espe areas suffering from long-continued urged the Ministry of Health to consider what measures, administrative or financial, are correct a growing evil, and called upon local to make arrangements for setting up women for supervision of postnatal and associated Mrs Eleanor Barton (Women's Coöperative proposed the resolution, criticised Sir George recommendations for diet in pregnancy on the that a diet including milk, cheese, butter, and fresh vegetables is outside the possible women of the poorer classes. Miss Mary (chief women's officer of the Labour Party) sa necessary to tackle the question of income of dietetic ignorance, and it was useless to educat on the subject of food values unless they had chasing power to translate their knowledge int Lady Barratt, M D, said her experience had her that when a woman dies in childbirth with standing cause being present there is invariabl tion of extreme malnutrition accompanied by stress during pregnancy No antenatal work s considered complete unless it provided at least a day for those women whose nutrition is The dinner must be provided at a central place no good supplying underfed mothers with food own homes, as they always gave it to other the family Dr I Frost (Inter-Hospital Medical Society) urged that the means test should not in families where the mother is pregnant, and allowance for maternity should be given, on the the National Health Insurance benefit, to ever whether insured or not

Glasgow Royal Samaritan Hospital

The new radiological department opened at the on Nov. 1st by Sir Comyns Berkeley has cost and will involve an annual expenditure of £ treatment rooms are large and airy, and the is arranged to be shock-proof Sir Comyns the special uses of X rays in gynæcology, both and therapeutic, and suggested two things to make the hospital a perfect unit—namely, private patients and some obstetric wards, it was the everyday experience of gynæcologi that a large percentage of patients admitted wards were suffering from conditions dire butable to childbearing Of the 15,000 g patients in Scottish hospitals at the time of the departmental committee's report 21 per cent as the result of a previous confinement, and he regarded as far short of the truth

ADDRESSES AND ORIGINAL ARTICLES

FLAT-FEET

BY PHILIP WILES, M S Lond, F R C S Eng
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THE shape of the foot is subject to as much indivi al variation as is any other part of the body The t may be long, short, fat, thin, broad, or narrow in ost every combination And just as for any type back there is an appropriate posture which is likely reduce stress to a minimum, so for any type of foot re is an appropriate posture The height of the gitudinal arch, to which so much attention has n directed is not a fixed value but is adjusted to requirements of a particular person Strictly, s impossible to consider alone the posture of the t, or indeed of any one part of the body; the whole losely knit and a variation in one element must be ected in the others if adjustment is to be maintained this paper, however, it will only be possible to refer the influence of the general bodily posture on the , and vice versa, when this is essential

flat foot, accurately speaking, is one which is cturally built so as to have a low arch when the is in the ideal posture for that individual This e of foot is not uncommon, it is not pathological it must be carefully distinguished from the hological condition with an everted abducted foot ch is usually called "flat foot" To describe this er condition as "flat foot" is bound to lead to fusion, and indeed is directly responsible for much he present misunderstanding about it In such s the arch of such a foot is lost because of a compli ed rotation in which the forefoot is everted nated) and abducted It is now becoming omary to take the latter part of the deformity—uction—as the descriptive one and, giving it its opædic name, to call the condition "pes valgus" not the ideal name, but it is generally understood will be used here The purpose of this paper is escribe the nature of the deformity in pes valgus mechanism of its production and methods of tment

he traditional comparison of the foot with an was made by anatomists and has been carried on surgeons This tradition has almost made us et that the foot is a living structure and overlook elementary principles of physiology From parison with a structural arch it was taught the longitudinal arch of the foot was maintained hree factors (1) the dorsal ligaments which tied "key stones" together, (2) the long muscles h "slung up" the arch, and (3) the plantar n and the intrinsic muscles which tied together bases of the piers Of these only the last can any significance Firstly, because in no part he body are ligaments subjected to continuous in, if they are pain is rapidly caused (This is ily appreciated by anyone who has tried to sleep railway carriage with his feet on the opposite seat n the pain in the ligaments of the knees which are venting hyperextension soon becomes intolerable) ondly, because a muscle is unable to maintain for a powerful contraction as would be required in "slung up" an arch to hold the body weight The ure of the foot including the height of its arch ends on the position of its intrinsic joints and the weight is transmitted from bone to bone just as it is from femur to tibia Likewise, the position of the joints is altered by active muscular contraction and maintained by the tone of the "posturing" muscles, as it is everywhere else in the body In the third factor of tying together the piers of the arch, the intrinsic muscles may play a part This is possible owing to the favourable leverage which permits the tension of posturing muscle tone to be utilised

The Joints of the Foot

A precise knowledge of the movements of the joints of the foot and the muscles controlling them is essential to any understanding of the normal and abnormal posture of the foot

The *subastragaloid* joints—i e, those between the astragalus and the os calcis—are complicated They consist of an antero medial and a posterior part which are separate (Figs. 1 and 3) The posterior part is a broad oval surface well adapted to transmit the body-weight It is nearly flat in the transverse plane and curved in the antero posterior plane, so that the convexity faces upward and forward (Fig 3) The antero medial part consists of two smaller flat surfaces joining the head and neck of the astragalus with the anterior end and sustentaculum tali of the os calcis The two bones are united by an interosseous ligament so placed as to form the axis of rotation (A Fig 1) Movement at these joints is a complicated rotary one It may be resolved into four parts for convenience of examination

(1) Movement about a vertical axis passing through A (Fig 1) The anterior end of the os calcis moves inwards or outwards below the head of the astragalus (Fig 2)

(2) Movement about an antero posterior axis, so that the os calcis tilts to one side or the other (Fig 2)

(3) Vertical raising or lowering of the outer side and the head of the os calcis, owing to the obliquity of the main articular facet and of the astragalar head (Figs 2 and 3)

(4) The os calcis is advanced or retarded in an antero posterior direction again owing to the obliquity of the main articular facet (Fig 3)

The *mid tarsal* joints are formed between the scaphoid and the cuboid on the one side and the heads of the astragalus and the os calcis on the other (Figs 2 and 4) These joints lie almost in one plane and they are usually described together, as though extensive movement was possible in them independently of the rest of the foot This is not the case because, as will be shown later, there is but little movement at the calcaneo-cuboid joint The astragalo scaphoid joint, however, is of ball and socket type and permits of a wide range of rotary and gliding movement, which is limited only by a loose capsular ligament

The remaining joints of the foot those between the scaphoid the cuneiforms, the cuboid, and the metatarsals, interlock to such an extent that only a little gliding movement between them is possible To this, however, there is exception in the joints connected with the big toe—those between the scaphoid and first cuneiform and, more extensively between the first cuneiform and first metatarsal which allow a fair amount of rotary movement in the saggital plane The first metatarsal can thus be raised and lowered independently

The bones of the forefoot all those in front of the mid tarsal joints are connected closely together by interosseous ligaments which limit all but the slightest movement between them Consequently the whole forefoot must move as one piece only the first metatarsal showing any considerable independent movement). Moreover, the forefoot is very closely attached to the os calcis by the long and short plantar ligaments and the spring ligament. On the other hand, there is no close union between the forefoot and the astragalus The forefoot and the os calcis must therefore move as one piece around the axis of the astragalus so that the main movement of the foot occurs at the subastragaloid and the astragalo-scaphoid joints (Fig 4) The subastragaloid joint is the key to the situation, with astragalo-scaphoid movement compensatory to it.

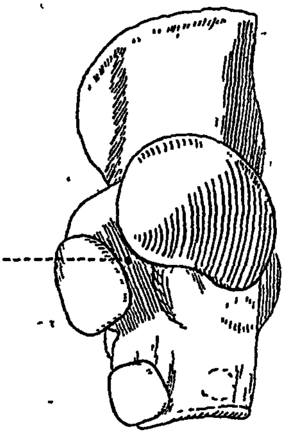


FIG 1.—The os calcis from above (in some bones the two smaller articular facets are joined together) A = vertical axis of rotation.

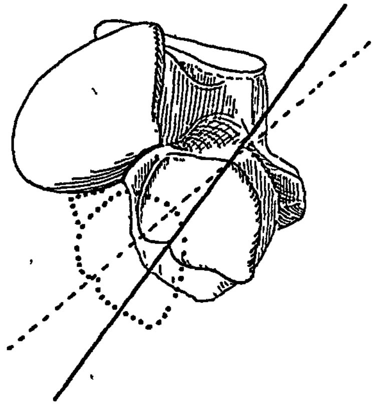


FIG 2.—The astragalus and os calcis from the front (semi-diagrammatic) showing rotation of the os calcis in two planes and lowering of its head during inversion For convenience, only the front end of the os calcis has been drawn.

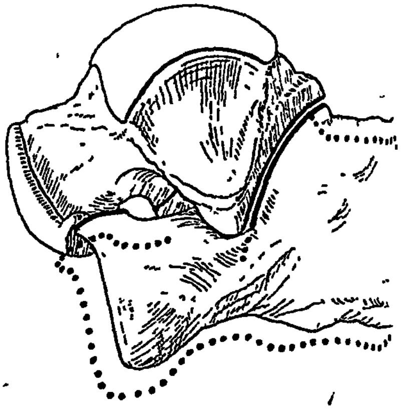


FIG. 3 —The astragalus and os calcis from the side (semi-diagrammatic) showing the os c be lowered and advanced during inversion.

The four parts into which subastragaloid movement was resolved each tend to produce the same effect on the foot—in one direction to invert, adduct, and raise the arch and in the other to evert, abduct, and flatten the arch. Although each part of the movement is in itself very small, say 10° to 15° of rotation and $^{1}/_{6}$th inch horizontal and vertical movement, they combine to produce a considerable effect. Consider first inversion and adduction, which occur together The anterior end of the os calcis moves inwards under the astragalar head, and the whole forefoot with it, so that the outer border of the foot moves under the inner (there is compensatory adjustment at the astragalo-scaphoid joint). The os calcis tilts about the antero-posterior axis so as to produce a similar effect The astragalus is bodily raised, tending to lift up the inner border of the foot. The os calcis advances beyond the astragalus, pushing forward the outer border of the foot; the inner border, via the scaphoid, impinges on the curved astragalar head, sliding round it to produce adduction. The reverse process takes place when the foot is everted and abducted. It should be noticed that this is the only method by which abduction and adduction can be obtained and that these are dependent chiefly on subastragaloid movement and cannot occur independently of eversion and inversion

It is now easy to see the position of the bones in the condition of pes valgus ("flat-foot") and the movements necessary to correct it The valgus foot position is one of abduction and eversion (pronation) with the foot made plantigrade by raising the anterior part of the inner border (chiefly the first metatarsal) at the metatarso-cuneiform joints (Fig 5) To correct the foot into the ordinary arched position it is only necessary to adduct and invert the foot (Fig. 6) and then lower the first metatarsal (Fig. 7) Since a plantigrade foot is essential height of the arch obtainable is limited by the a of movement available at the bases of the metatarsals The movement required to c valgus foot is thus a rotary one, taking pla means of the subastragaloid complex It is just to try to lift up the inner border of the fo does the ordinary arch-support appliance, becau can have no appreciable effect on the sub joint

When a pair of habitually valgus feet are cor they are necessarily adducted and therefore the are turned in This intoeing is in turn correct external rotation of the whole limb occurring the knee or at the hip It follows that a valgus can also be corrected by keeping the foot still rotating outwards the leg and, with it, of course astragalus. There are thus two methods of pes valgus which produce exactly the same In one, the leg is kept still whilst the forefoot calcis are moved inwards and then intoeing is com by external rotation of the whole leg and foot. I other, the forefoot and os calcis are kept still the leg only is externally rotated

Muscular Control

The action of the muscles controlling the feet be briefly reviewed, because the ordinary text presentation is rather misleading

TIBIALIS ANTICUS —*Insertion:* internal cuneiform the base of the first metatarsal *Action* · to dorsifl first metatarsal at the metatarso-cuneiform and s cuneiform joints and then by its continued act dorsiflex the foot at the ankle and to assist in If the latter movements are prevented, the form occur alone

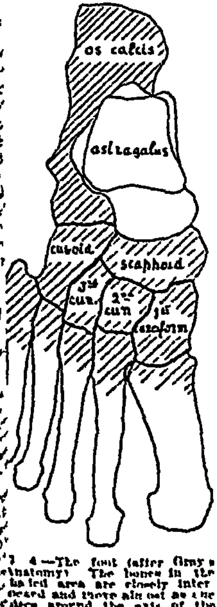
TIBIALIS POSTICUS —*Insertion* · the tuberosity of scaphoid with expansions extending to the os calc cuboid, all three cuneiforms, and the second, th fourth metatarsal bases—i e, the whole forefoot a calcis, except the first metatarsal which moves *Action*. the tendon curls round the internal When then runs straight to its primary insertion alone it therefore approximates the scaphoid and internal malleolus The forefoot and os calcis move piece and the whole series of subastragaloid move set in motion

eroneus Longus.—*Insertion* the tendon winds round external malleolus, then round a grove in the cuboid . crosses the sole of the foot to be inserted into the rnal cuneiform and base of the first metatarsal Its rtion thus corresponds to that of the tibialis anticus *ion* it depresses the first metatarsal at the metatarso eiform and the scapho cuneiform joints and then by continued action approximates the cuboid to the rnal malleolus, moving the whole forefoot with it via subastragaloid joint If the foot is held inverted by tibialis posticus, it can then only depress the first tatarsal

eroneus Brevis—*Insertion* the base of the fifth tatarsal *Action* to evert the foot by approximating nsertion to the external malleolus

bductor Hallucis—*Origin* the inner tuberosity of os calcis and the ligaments of that region *Insertion* inner border of the first phalanx of the big toe *Action* n abductor of the big toe it has fallen into disuse and y few people are able to train themselves to acquire this ion Its more important action is to depress the head he first metatarsal It also spans the base of the piers he longitudinal arch and helps to tie them together

onsideration of the action of these muscles makes lear that inversion and adduction of the foot is nly carried out by the tibialis posticus and rsion and abduction by the peronei Elevation l depression of the first metatarsal, essential to intain a plantigrade foot, are performed by the ialis anticus and the peroneus longus respectively the foot is strongly inverted, the tendons of both ialis anticus and posticus can be seen standing out g 6) Whilst in this position, however, it is essary to inhibit the tibialis anticus before the oneus longus can come into action and depress the t metatarsal (Fig 7) This can be demonstrated on oneself by raising and lowering the first metatarsal without allowing any other movement of the foot The movement is a little difficult, but is readily acquired after learning to inhibit the tibialis anticus at the right moment



' 4—The foot (after Gray's Anatomy) The bones in the hatched area are closely interlocked and move almost as one piece around the axis of the astragalus at the subastragaloid and astragalo-scaphoid joints.

To correct a valgus foot there are two possible methods in both of which the same muscles are used In one, the foot is first inverted by the two tibials which swivel the fore foot and os calcis at the subastragaloid joint Then the tibialis anticus is inhibited and the peroneus longus depresses the first metatarsal to render the foot plantigrade the foot meanwhile being held inverted by the tibialis posticus alone The abductor hallucis assists in both the last two actions Alternatively, a precisely similar effect is produced if the foot is kept still on the ground whilst the leg, and the astragalus with it, are twisted outwards by the tibialis posticus and the first metatarsal head is held down by the peroneus longus Of course, the rotators of the leg on the thigh or of the thigh on the trunk are also acting in this case

The maintenance of the normal arched foot depends largely on the closely balanced action of the tibialis posticus and the peroneus longus These muscles are often regarded as antagonists and *in some actions* they may be, but for the most part they must act as synergists The tibialis posticus fixes the forefoot whilst the peroneus longus pulls down the first metatarsal The real functional antagonist to the tibialis posticus is the peroneus brevis, and to the tibialis anticus the peroneus longus. It is very seldom that either of these pairs contract in coōperation

Ætiology

The foot of a new born baby is very supple and mobile and can hardly be said to have any particular posture As the walking age approaches, however infants appear to become divided into two broad types The plump infant, likely to grow into the sthenic type, develops an obvious longitudinal arch and maintains this arch when he starts to walk On the other hand, the asthenic infant with long, thin feet is very frequently found to have extremely valgus feet as soon as he begins to stand The defect is entirely postural and the feet can easily be held passively in the corrected position A few of these infants rapidly acquire a better posture of their feet , the majority show no change until about four to six years old when they improve spontaneously, but in the remainder the posture persists into adult life. Such people are often of poor general muscular tone and correspond to Goldthwait's asthenic type

An adult who has had normally arched feet may acquire valgus feet at any time during life This is brought about by muscular failure of one sort or another Such failure may be due to a variety of troubles—general illness standing, prolonged or habitual fatigue, as when starting a new occupation and increase in body weight are amongst the more common They all cause unaccustomed muscular fatigue, the balance of the muscles is upset and the feet assume the valgus position under the influence of gravity

A fairly common factor in the production of valgus feet is a contraction of the posterior muscles of the calf, generally referred to as "short tendo Achillis" The condition is characterised by the inability fully to dorsiflex the foot at the ankle joint Normal movement allows the foot to dorsiflex to form an angle of about 75° to 80° with the leg and is essential for normal gait Short tendo Achillis is not infrequently seen as a "congenital" condition, and is quite distinct from spastic paraplegia, in which relaxation can always be obtained with trouble If the degree of contraction is considerable, the child is forced to walk on his toes However with a lesser degree he is able to get the heels to the ground by assuming the valgus position In adults the contraction is usually acquired and since it is seen far more frequently in women than in men it is likely to be associated with wearing high heels I have recently examined the feet of a series of normal women mostly aged 18 to 25 years Dorsiflexion was not forced but was estimated by applying reasonable pressure whilst carefully avoiding eversion By this standard about 20 per cent were classified as having short tendo Achillis When such women wear low heeled shoes for tennis, &c, their feet are forced into valgus—a common cause of foot-strain and painful calves.

General bodily posture can also have a direct influence on the posture of the feet. The person with lumbar lordosis and forward tilting of the pelvis is a good example Here the centre of gravity of the body is carried slightly forward in front of the acetabula and stabilisation is obtained by internally rotating the femora This in turn causes intoeing which may be corrected either by external rotation at the knee or by eversion and abduction of the feet. The former is not comfortable as a permanent posture, so the latter, or valgus foot, position is assumed This shows the danger of trying to force a child who intoes to turn out his feet There may be a perfectly good postural reason for the intoeing and the two defects must be corrected together

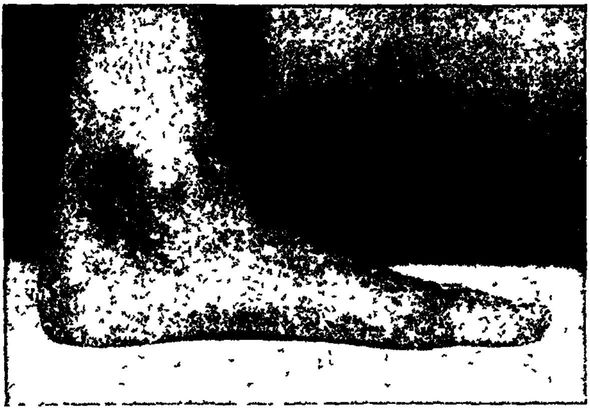


FIG 5—A marked degree of "congenital" pes valgus in a man aged 34.

Treatment

Before considering the treatment of a case of pes valgus an accurate diagnosis of its cause must be made This requires a careful examination and, if there is any doubt, the patient should be completely undressed so that the posture as a whole can be reviewed From the point of view of treatment, cases fall into four groups.—

(1) Those with disease of the central nervous system—e g, anterior poliomyelitis

(2) Those in which the pes valgus is part of a faulty posture of the whole body. If treatment is deemed advisable, general remedial exercises of a suitable type must form an essential part of it

(3) Those with a "short tendo Achillis" in which no amount of treatment to the feet alone can be of much use Shoes with heels of an adequate height will usually give relief by doing away with the need for full dorsiflexion of the ankle, and sometimes it is possible to "stretch" the calf muscles a little by exercises In a few cases, especially young boys, it is advisable to lengthen the tendo Achillis by operation

(4) Those cases, the great majority, in which the faulty posture of the foot is due to muscular failure or "congenital" maladjustment, are discussed below.

In the last group the muscles are at fault and the problem to be faced is one of muscular education or re-education The customary approach is by means of exercises which are repeated a given number of times daily. This undoubtedly helps to keep the feet supple and to strengthen certain groups of muscles It is useful where the muscles are weak, but it is not the right approach to the acquisition of a new habitual posture. Frequent repetition of exercises will facilitate the performance of particular movements, but they will not teach muscles as it were to live in a new position. function of exercises in the treatment of valgus is mainly to teach the patient to move into the posture and give him conscious control over movements involved Once this has been exercises often may be stopped The real task persuade him to maintain the posture by conscious effort until such time as it unconscious habit. This is not easy involves a good deal of coöperation from the who must be possessed of some inte considerable perseverance. Patients for ment have therefore to be selected with care. should have a genuine desire to correct also, in the case of a "congenital" de young enough to stand a reasonable chance of A lifelong posture is not to be interfered *it involves extensive adjustment by the rest*

To teach a patient to move into the new not difficult. Only one foot should be time.

The patient sits on a chair with the foot on the and the leg below the knee vertical. The instructor opposite and firmly grasps the leg above the ank prevent any movement. A mark is made on the about 1½ inches internal to the first patient is told to move the front of the foot inwards mark (Fig. 6) The big toe is then depressed, either or without the assistance of the hand. The foot is the corrected position (Fig 7) These repeated until the patient is able to do them without moving his leg at all. It is usually found there is but little pressure under the first metatarsal because the tibialis anticus is in action He has to be taught to inhibit that muscle and to contract peroneus longus. Some people find this difficult little ingenuity has to be exercised in teaching Eventually it should be possible rapidly to raise and the first metatarsal without moving the rest of the

This method of arriving at the new rather a clumsy one and is difficult to use walking It is only used for ease in teaching and patient can now readily learn the alternative me

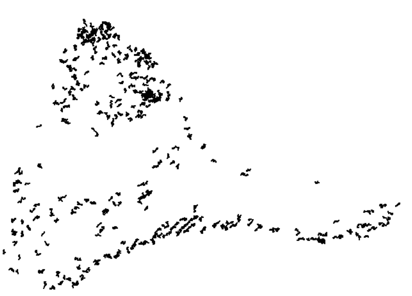


FIG 6—The same foot inverted and adducted The of the tibialis anticus can be seen standing out in the internal malleolus and that of the tibialis posticu downwards and forwards from the junction of the the malleolus

In this the foot is kept still on the ground whilst is rotated outwards If the earlier movements have thoroughly mastered, this presents no difficulties movement must be made without the tibialis coming into action at all or else pressure is transfer the outer side of the foot It is absolutely essential most of the weight to be carried by the big toe, as ing of weight on the outer metatarsals is one of the monest causes of anterior metatarsalgia The last rement, correction of the foot by rotation of the leg is repeated standing with the whole weight on that foot king with the foot held *corrected* is then attempted irst it seems impossible and the gait is hopelessly d, but it *is surprising how rapidly it becomes normal* ilst learning to walk, it is never possible to concentrate

g 7—The same foot corrected The tibialis posticus tendon n still be seen but the tibialis anticus has been relaxed and e first metatarsal depressed by the peroneus longus

nore than one foot at a time The second foot should ompletely neglected until the first is almost automatic

is obviously useless if treatment stops as soon as patient leaves He has got to acquire a new it, to keep his foot all the time in a new position a day or two he must concentrate almost exclu ly *on his foot whilst standing or walking* During time a reflex, or rather two reflexes are being litioned The moment he relaxes from the ected position to the valgus position pressure will e on to the sole under the arch He must learn ecognise this, at first consciously, as a stimulus ng for correction of the foot Likewise, pressure he outer metatarsal heads must become a stimulus ncrease the tension of the peroneus longus and the pressure on the first metatarsal The time n for these reflexes to become unconscious varies tly with different people and with the severity and tion of *the deformity* In a case with an acquired ormity it may be only a matter of days, in a ngenital" one it may be months This does not n months of continual concentration on the feet that, during this time, the stimulus produced by lapse evokes a conscious response instead of an onscious one One difficulty which sometimes s amongst very conscientious patients is that of -correction They think so much about their feet they correct them more and more the slightest pse from their latest position becoming a stimulus et further correction Such people will return plaining of lack of progress and yet examination show almost cavus feet

he question of arch supports always arises when ting "flat feet" It has been shown that it is omically impossible for supports alone to correct deformity The most they can do is to give some to a patient who can produce a voluntary ection As a general rule at any rate in children younger patients they should be avoided The et is to teach the muscles to maintain a new ure and any mechanical aid is likely to interfere the acquisition of the new muscle balance ever if it is essential to use supports, they must easured and fitted whilst the foot is held corrected usual method fails to adapt the supports to the new curves of the foot and to allow for the shortening of the foot which the correction has produced Badly fitting supports just indent the soft tissues and cause discomfort and, when worn for any length of time, they are amongst the commonest causes of chronic foot strain The foot in its new posture is of such a different shape that a new set of shoes may be required These should not be bought at the outset of treatment, but when a thorough control of the foot has been obtained It is then found that new shoes, of a style to fit the "new" foot, are of great assistance

The active treatment of children cannot be commenced until they are of an age when they can coöperate This varies greatly with the child and its environment, but it is often found to be as young as four or five years old The general line of treatment is the same as for adults but its success varies directly with the skill with which the interest of the child is engaged At a younger age there is little to be done (provided the tendo Achillis is normal in length) Some influence can be exerted on the angle of tilt of the os calcis and consequently the whole subastragaloid joint, by fitting valgus wedges to the heels of the shoes Care must be taken to see that the heel part of the "uppers" is closely fitting or the heels wobble in the shoes and the obliquity of the wedge is not transmitted to the os calcis Fixation in plaster is just a waste of time and the use of steels, at one time a common practice, is but very seldom justified owing to the severe psychological trauma that this procedure inflicts

Pain in Pes Valgus

Valgus feet are not painful per se, except in extreme cases, and many people with them go through life without being aware of it Such feet are, however, subject to the same causes of pain as are any other feet and, because a certain number of people having them complain of pain, the idea has spread that the posture itself is the cause of the pain The great majority of cases of painful feet fall under the heading of "chronic foot strain"[1] Briefly, this is a condition in which some minor trauma or unaccustomed strain has injured the ligaments resulting in "adhesion" formation The function of the ligaments is to check the extremes of movement and, as already shown, they play no direct part in the maintenance of posture and no continuous strain falls on them It is the muscles that hold the joints in position and only when they fail are the ligaments placed under strain A ligament may be injured either as the result of such muscular failure or by some external trauma, it then heals by the ordinary process of scar formation and an "adhesion" is said to result This scar contracts and limits joint movement so that, when full movement is attempted, the scar is stretched and causes pain

There are two possible methods of relieving pain in chronic foot strain One is palliative and aims at preventing full movement of the joints so that no strain falls on the "adhesion" Arch supports are commonly fitted for this purpose and, with well shaped feet, often give temporary relief After a time however, further periarticular contraction occurs so that there is more limitation of movement, the support then becomes inadequate and pain returns With valgus feet supports often fail at the outset to give relief because the shape of the foot is such that they cannot take the strain off the affected joints and ligaments The other method of treatment is curative The "adhesions" are ruptured by manipulation and prevented from re-forming by subsequent massage and exercises Valgus feet come under observation either for cosmetic reasons or because they are painful If they are painful, they should be manipulated When the pain has been cured, that side of the problem can be forgotten and the desirability of treatment of the deformity assessed on general principles

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[1] Wiles P : Brit Med Jour [illegible]

Summary

The height of the arch of the foot is shown to be determined by the posture of the subastragaloid joint The muscular control of this joint is discussed and a method for the re-education of the muscles in cases of pes valgus is described

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SOME OBSERVATIONS ON HYPOCHROMIC ANÆMIA AND ITS RELATION TO PREGNANCY

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FROM time to time a good deal of attention has been paid to the various forms of anæmia encountered during pregnancy, and especially to that rare form which resembles Addisonian anæmia in blood characteristics. But it is now fairly well recognised that a simple anæmia with a low colour-index is by far the commonest. The treatment of this form with iron salts has also been shown to be as successful as that of other hypochromic anæmias. Patients suffering from "achlorhydric anæmia" are known to become more anæmic during pregnancy and to improve somewhat after the birth. Since the fœtus depends on the maternal stores for a sufficient supply of iron, which must be adequate for at least the first six months of its extra-uterine life as well as for its uterine development, and since an infant is rarely born without a full amount of hæmoglobin, it is logical to assume that pregnancy results in a certain drain on the blood-building resources If the resources are not well stocked the mother shows this poverty in an anæmia which may manifest itself during the pregnancy or the puerperium. Any hæmorrhage at this period would naturally intensify an existing anæmia.

This paper gives an account of observations conducted on 51 apparently normal women who were followed carefully through their pregnancy, and of a smaller group of 20 who were frankly anæmic after their last confinement. The anæmia was hypochromic in character and the response to iron therapy good

Castle and Strauss[1] have published important observations on anæmia in pregnancy. They found that normal pregnant women showed some minor degree of reduction in red cell and hæmoglobin values during the first six months, but they regarded the change as more the result of hydræmia than anæmia. In other words, they concluded that the normal pregnant woman does not become anæmic. They also showed that those who did develop a definite hypochromic anæmia were patients showing a disturbed gastric secretion, or receiving poor diets, or both. Castle and Strauss watched 20 through their pregnancies and, in the 11 who developed an anæmia, one or other of these factors was present. In a further publication[2] they recorded 30 examples of hypochromic anæmia in pregnancy, 19 of wh showed achlorhydria and only three a normal secretion. The others had a poor diet Castle Strauss[3] also demonstrated that during even in normal women, there is a reduction in acidity, for 75 per cent of 24 normal pregnant secreted little or no hydrochloric acid during pregnancies, while all showed an improved secretion in the puerperium.

OBSERVATIONS ON NORMAL PREGNANT WOMEN

Of our 51 patients who were followed pregnancy and puerperium, six developed some of anæmia. All were apparently healthy when were first seen, and the majority were young bearing their first child. The blood examinations performed at fortnightly intervals and the analysis was done three times · during the and third trimesters and (usually) in the after delivery. The ages varied between 18 and the average being 26 3 years.

Forty-five of the patients remained well their pregnancy. (The six who showed anæmia described separately) Of these, 29 were prim 14 had one child, and 2 had two children All patients were closely questioned about their di 30 had an adequate diet, 11 a moderate one, a poor one We class a diet as poor when the p admits to taking no meat and green vegetab years ; as moderate when these articles are a week, and as good when meat is taken daily.

Blood findings.—Although none of the 45 w exhibited any anæmia during their pregnanc was noticed that in the majority the red cell hæmoglobin values fell slightly during the last months Improvement was noted five to six after delivery, but the highest figures were observed until two months after confinement showed this fall during the later three m while five showed the reduction in the fifth sixth months. The average fall in hæmoglobin only 8 per cent , the maximum being 17 per The average fall in red cells was 280,000 per c the maximum being 800,000 per c cm. This slight change is hardly significant except as sh the smallness of the blood changes during preg in healthy females

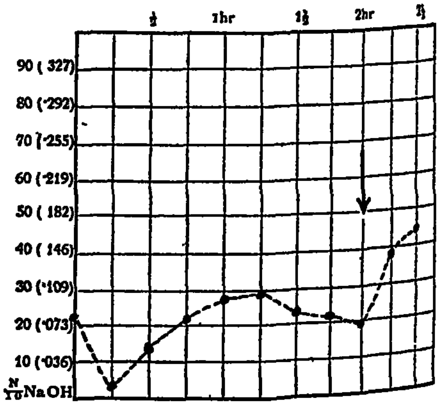
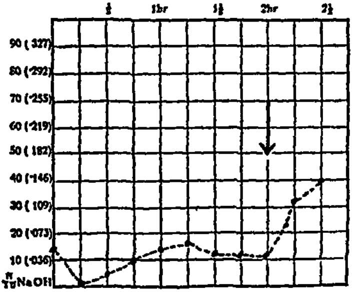


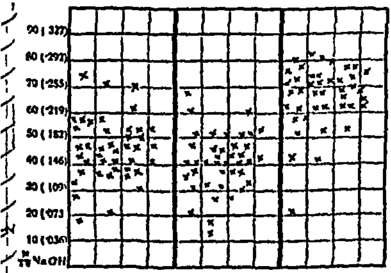
FIG 1—Composite curve of hydrochloric acid the first trimester of pregnancy and obtained from analyses of 45 normal women In this chart, as in F and 3, the values to the left of the arrow were the with the ordinary gruel meal, and those to the right of arrow after the injection of histamine

Gastric secretion—The work of Castle and S demonstrated a diminution in acid secretion gnancy We conducted similar investigations our patients, using the same methods of analysis n our former studies After an ordinary fractional lysis the stomach was emptied, histamine was ected, and the juice was aspirated at 10- and minute intervals The volume, acidity, and ferment tent were recorded, pepsin being estimated by ld's Edestin method The 45 patients were all pable of secreting a normal amount of free HCl, d no case of permanent achlorhydria was found in s group



2 —Composite curve of hydrochloric acid secretion in the hird trimester of pregnancy, obtained from the analyses f 45 normal women

Our findings are in accord with those of Castle d Strauss in demonstrating the definite reduction acidity when the secretion is tested during and ter pregnancy In our group the most marked falling was apparent in the last two months of pregnancy e curve of acid to the ordinary gruel meal is shown the three charts, Figs 1, 2, and 3, the values shown ing the averages of the analyses in the 45 patients the three stages While the acidity is moderately od during the first trimester, there is a decided wering of values in the last trimester, but the retion in the puerperium shows a higher acidity an either of the two periods of testing during egnancy This fluctuation in secretion was remark ly constant, and only two of our patients showed lues during the puerperium which were less than ose observed during pregnancy In two cases the duction in acidity at the third trimester was solute, for a state of achlorhydria was present is, however, was replaced in both by a good cretion of acid after the confinement.



4 —Maximum hydrochloric acid values following histamine injection in the three periods of analyses (42 cases)

The same change in acid values was found with histamine stimulation The figures for free HCl are shown in Fig 4 The change is best exemplified by stating that only 4 patients showed a maximum acidity of 60 units or more during the first 3 months and only 3 during the last 3 months, but 34 were able to secrete this amount of acid after pregnancy. There is therefore good reason to believe that pregnancy in the normal woman is associated with a reduction of gastric acidity but that this reduction is only temporary and is soon replaced by a return to normal after confinement In the two patients who showed achlorhydria in the last trimester, histamine resulted in the secretion of a small but definite amount of HCl Careful note was made of the volumes of the juices secreted in response to histamine, but the increase in acid and pepsin values was not due to a lessened volume secretion In fact, the volume varied directly with the acid values, the higher the acid the more the juice secreted

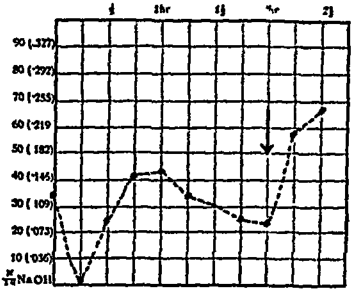


FIG 3 —Composite curve of hydrochloric acid secretion in *the second month after delivery* obtained from the analyses of 45 normal women

TABLE I

Maximum Pepsin Values following Injection of Histamine in the three periods of analysis (42 cases)

Units pepsin	First trimester	Third trimester	Postnatal.
	Number of cases		
1024	11	1	19
512	18	6	20
256	11	21	3
128	2	14	0

Pepsin was also estimated in the post histamine samples, and Table I gives the figures obtained While 19 showed the maximum value of 1024 units of pepsin after pregnancy, only one was able to secrete this value in the third trimester Although there is some reduction in the first period of pregnancy, the pepsin secretion does not appear to be so influenced as the acid secretion

Six patients, out of a total of 51, showed some degree of anæmia (Table II) While the majority who showed no appreciable anæmia were primiparæ four of the six cases in this group were already mothers of large families (Table II) Four gave histories of poor diet and one suffered from menorrhagia. The anæmia was hypochromic and progressed until treatment was instituted. In the first case iron therapy maintained the hæmoglobin percentage around 70, but it did not go beyond this figure until after pregnancy. Iron treatment was also given to the second case and the hæmoglobin remained between 68 and 72 per cent throughout her pregnancy While it was difficult to obtain a hæmoglobin of 100 per cent during pregnancy, treatment with iron kept the patient's hæmoglobin within a safe level of 65–70 per cent. until confinement One of our cases (Case 6), however, did not respond to iron Unfortunately we are uncertain whether the form of iron administered did not possibly play some part in this lack of response She was given Blaud's pills, and in the eighth month the hæmoglobin had fallen to 40 per cent. She gave birth to premature twins The hæmoglobin rose rapidly in the puerperium. It is logical to assume that the double drain of twins played some part in making this patient's anæmia more resistant

TABLE II

Group of Females showing Anæmia during Pregnancy

—	Age.	Children	Diet	Chronic hæmorrhages	Hb. per cent	Red cells (mills).	Gastric secretion.
1	28	1	Good	Nil	60	3 4	Achlorhydria.
2	42	8	Poor.	Menorr	56	4 0	,,
3	33	7	,,	Nil	68	4 3	,,
4	27	5	Good	Nil	41	3 6	Hypochlorhydria.
5	28	5	Poor.	Nil	60	4 2	,,
6	24	0	,,	Nil	66	4 3	Normal acidity.

Menorr. = menorrhagia.

Without exception, all the infants' bloods showed a full amount of hæmoglobin and red cells at birth It appears that, however anæmic the mother, the infant is given a sufficient supply of necessary material for the manufacture of the blood constituents. The premature twins showed hæmoglobin values of 150 per cent. and 148 per cent. when the mother showed only 41 per cent.

The findings in the gastric analyses of this group are of interest: 3 show achlorhydria, 2 hypochlorhydria, and only 1 (the mother of twins) a normal gastric secretion The first patient had achlorhydria throughout pregnancy and the puerperium Histamine stimulation, however, succeeded in demonstrating some free HCl postnatally, up to a strength of 18 units HCl. The second not only showed achlorhydria during the three test periods, but was also resistant to histamine on the three occasions The third case showed a small amount of HCl to histamine after confinement, but absolute achlorhydria during pregnancy. This patient was known to be suffering from hypochlorhydria in 1930 The fourth and fifth had hypochlorhydria, but histamine demonstrated a postnatal HCl value of 40 and 28 units The sixth showed a good postnatal secretion and HCl to the value of 58 units following histamine

The importance of achlorhydria in its relation to the anæmia of pregnancy is well exemplified by Case 1 The patient was young, and had had only one child, and her diet was good The abnormal gastric secretion is the only positive factor which can explain her inability to stand a second pregnancy. In the second and third patients the inadequate diets and menorrhagia must also be regarded as contributory factors in producing an anæmia The fourth patient had suffered a severe postpartum hæmorrhage which rendered her pale after her last confinement, 19 months previously, and she was also the mother of triplets The drain consequent on these events was probably responsible in part for this patient's anæmia, and the hypochlorhydria cannot be regarded as the sole determining factor. The fifth was the
of two pairs of twins, and this, plus a poor diet,
considered as promoting an anæmia The sixth
us more difficulty in accounting for her anæmia
certainly had a diet which could be classed as
but 'she showed a good secretion of HCl
were surprised to find her hæmoglobin fall dur
fifth and sixth months Her lack of respo
treatment with Blaud's pills was again
until she gave birth to twins.

To sum up this small group of six patie
disturbed gastric secretion is present in 5, a
only patient who developed an anæmia in the p
of a normal gastric secretion was in the
taking a poor diet and gave birth to twins
all the patients who manifested no anæmia
pregnancy, 45 in number, showed a good
secretion, five out of this small group pos
an abnormal and poor gastric secretion

WOMEN WHO WERE ANÆMIC AFTER THEIR L
PREGNANCY

These patients, 20 in number, were referred
because of their pallor, which persisted afte
last confinement The patients were doubtle
during pregnancy, but we have no observatio
them at that time All the cases were confined
the preceding twelve months.

(a)	Anæmic women	1–6 children	10 cas
(b)		7–10 ,,	6 ,,
(c)		11 or more ,,	4 ,,

(a) *Anæmic women, 1–6 children*—Ten case
into this group and the main features are
Table III Their ages ranged between 25 and 42

TABLE III

—	Age.	Children	Diet.	Chronic hæmorrhage	Hb per cent	Red cells (mill)	Gastric
1	25	1	Poor.	+	34	2 4	Normal a
2	28	1	,,	0	60	3 4	Achlorhy
3	32	3	,,	0	58	3 7	
4	29	3	,,	0	74	4 0	Hypochl
5	27	4	N.	0	74	4 6	Achlorh
6	33	4	,,	+	64	4 0	
7	33	5	Poor	0	58	3 7	Hypochl
8	42	5	,,	0	64	3 9	Achlorhy
9	27	5	N	0	41	3 6	Hypochlor.
10	32	6	Poor	0	48	3 2	Normal a

N. = normal.

giving an average of 30 years Seven gave a
deficient diet Chronic hæmorrhage, in the fo
excessive menstrual loss, was noted in two only
of whom had a poor diet and showed a hæmo
of 34 per cent The tongue mucosa, and nail
abnormal in two cases The hæmoglobin
between 34 and 74 per cent The two patients
showed hæmoglobin values of 74 per cent.
received some treatment before they came t
Table III. shows that a gastric defect was pres
the majority · achlorhydria in five and hyp
hydria in three Only two patients were a
secrete HCl above 10 units in strength on an or
gastric analysis, the maximum reached being
30 units respectively. Eight of the patient
submitted to histamine stimulation and HCl
recovered in six of the cases, but the height o
HCl, even after histamine, was below what
be expected in a normal subject In seven, muc
excessive in the resting juice Pepsin was
in the eight tested for it, and in moderatel
concentration (256–1024 units)

This small series of ten patients demonstrate ortance of the gastric secretion in the development anæmia in association with pregnancy More than these women had had a poor diet The patients not come to us on account of digestive disturbances were referred to us or sought for on account anæmia Given the proper opportunities—the inued restriction in diet, menorrhagia, and ibly further pregnancies—these patients would nately show all the features of achlorhydric mia At present only one showed any tongue nges, and only one complained of brittleness of Furthermore, the average age was only 30 paring the gastric findings with those seen in orhydric anæmia, it is found that HCl is far more monly obtained after histamine in this group and pepsin secretion is more frequently normal in value e two patients who showed free HCl in the ric juice had very poor diets Their response on was most rapid The hæmoglobin rose in one from 48 per cent to 76 per cent in three weeks

) *Anæmic women, 7–10 children*—Six cases fall this group, three of whom bore 8 and three 9 dren All were anæmic and all gave a history of g pallor and symptoms of anæmia in former nancies Table IV gives the main features

TABLE IV

ge	Children	Diet	Chronic hæmorrhage	Hb per cent	Red cells (mill)	Gastric secretion
45	8	Poor	+	32	3·0	Achlorhydria
30	8	N	+	60	4·0	
35	8	Poor	+	20	2·4	Hypochlorhydria
38	9	"	+	40	3·7	Achlorhydria
40	9	"	0	48	4·3	"
48	9	N	+	42	3·6	

N =normal

d on examination The ages ranged between nd 48 years, the average being 42—twelve years r than the first group Four of these patients a deficient and two a normal diet history onic hæmorrhage, in the form of menorrhagia, present in five of the cases, including the two ents taking a normal diet The tongue was normal ll, but the nails were brittle in three The spleen palpable in one In only one was the hæmoglobin entage above 50, and in her the diet was normal e showed a normal gastric secretion Five showed orhydria and one hypochlorhydria with a imum secretion of 10 units HCl Stimulation with amine produced HCl in only two Of these, was known to have had achlorhydria five years iously, and the other only succeeded in secreting to histamine on the second attempt six months r correction of the anæmia Pepsin was present in secretion of three of the four cases tested and an lia was noted in one This group again demon tes the frequency of some impaired gastric tion in anæmia following pregnancy One of these ents showed some appreciable improvement in state of the gastric secretion following the return ormal blood values

here is it must be admitted, little if any distinction een the clinical picture of some of these patients that of "achlorhydric anæmia the one stage ing imperceptibly into the other An example is first case (Case 11) a woman of 45 mother of t children, giving a history of a deficient diet and orrhagia for three months In addition to a hæmo in percentage of 32, she exhibited advanced spoon ed nails a palpable spleen, and achlorhydria excess mucus content There is in fact no point of distinction between this hypochromic anæmia and achlorhydric anæmia, and the response with iron is equally good. All the patients responded well to iron therapy

Comparing this group of six with the former group of ten patients, the anæmia is more marked and the nail changes are more frequently present, moreover, the gastric secretion responds less to stimulation with histamine In other words, the more advanced changes in the gastric secretions are in keeping with the signs of a more chronic anæmia

(c) *Anæmic women 11 or more children*—Only four fall into this group of women who had had 11 or more children, and who were anæmic and remained anæmic after their last confinement Table V gives the main points The respective ages varied between 39 and 48 years, the average being 45 Three of the patients were accustomed to a poor diet and two suffered from menorrhagia The tongue showed no changes and the nails were normal The spleen was palpable in one case In the four a marked reduction in hæmoglobin was recorded, ranging between 20 and 30 per cent The anæmia had been long standing, but the patients had never sought advice until their last confinement Menorrhagia had intensified the anæmia in two—during the previous 12 and 8 months respectively The four showed an abnormal gastric secretion achlorhydria in two and hypochlorhydria in two In the two showing hypochlorhydria HCl was present up to 5 units in one fraction only in both of the cases Mucus was abundant in all samples Of the two cases submitted to histamine one failed to secrete either HCl or pepsin—a true achylia—while the other secreted a moderate amount of pepsin only

TABLE V

—	Age	Children	Diet	Chronic hæmorrhage	Hb per cent	Red cells (mill)	Gastric secretion
17	45	11	Poor	0	20	2·1	Achlorhydria
18	39	11	N	+	30	2·4	Hypochlorhydria
19	48	12	Poor	+	28	3·1	Achlorhydria
20	45	12	"	0	25	2·0	Hypochlorhydria

N =normal

Although we have no observations on these 20 women when they were pregnant, doubtless they suffered from anæmia at that time Many of them gave a history of long standing pallor with intensification of the symptoms of anæmia when pregnant Reference has already been made to the absence of any anæmia in the normal woman during pregnancy, but it is well known that some show a mild anæmia which might not be obvious until the puerperium These 20 patients showed a sufficiently marked and persistent pallor to be classed as suffering from anæmia in need of treatment Their tardiness in blood regeneration appears to be not without reason.

Of first importance in assessing any potential cause are the abnormalities found in the gastric secretion Only 2 out of the 20 patients were able to secrete free HCl above 10 units in strength on ordinary fractional analysis, 12 were achlorhydric and 6 were hypochlorhydric Histamine was injected into 14 of whom 8 showed free HCl secretion, and pepsin was secreted in good amounts by the majority Achylia was noted in two patients There is therefore in this group of 20 patients evidence of secretory derangement in the stomach of 18 In the light of recent knowledge on the importance of a normal gastric secretion for the proper assimilation of iron from the food, the high incidence of achlorhydria ar hypochlorhydria can be justifiably regarded not as a coincidence but rather the responsible factor in the development of the anæmia associated with pregnancy. It also accounts for the readiness with which this anæmia responds to iron therapy, as achlorhydric anæmia does.

The next important factor is the diet In 14 of these women a history of a poor diet was obtained. This restriction of iron-containing foods would result in inadequate replenishment of iron stores and show itself in a hypochromic anæmia made worse by pregnancy. Since some of our patients were known to eat ordinary food, a deficient diet cannot be a constant or a *necessary factor for the development of anæmia during or following* pregnancy. Some of our patients could be rightly regarded as examples of achlorhydric anæmia, but epithelial changes, such as the mucosal atrophy of the tongue and nail changes, were infrequent. Furthermore, the gastric juice showed less impairment (especially in our first group of 10 patients) than is usually encountered in achlorhydric anæmia. It is, however, true to state that this anæmia, precipitated by pregnancy, merges gradually into achlorhydric anæmia, and the evidence *suggests that both forms are in principle dependent on a deficient gastric secretion*

CONCLUSIONS

In the development of hypochromic anæmia, a gastric secretory defect has proved to be the most important single factor. This has been shown to be true in the syndrome achlorhydric anæmia, in the anæmia of gastrectomy and gastro-enterostomy. Similarly, in pregnancy and following pregnancy, evidence is brought forward to suggest that in the hypochromic anæmia seen at these times the gastric secretion is not only commonly deranged but is in all probability the essential and primary disturbance.

The contributions of Ivy and his colleagues[4] lend experimental support to the importance of this relationship of achlorhydria to the anæmia of pregnancy. They succeeded in maintaining many dogs, upon which a total gastrectomy had been performed, quite fit and well for a number of years provided the diet was adequate An anæmia was rapidly induced, however, by allowing the animal to become pregnant, and this anæmia, hypochromic in type, was produced in the same dog during five successive pregnancies. Provided the diet was adequate and no strain was placed on the "blood-building substances," a dog with "experimental achlorhydria" would remain free of anæmia, but once an extra demand such as pregnancy existed anæmia developed. This anæmia was found by Ivy to be immediately rectified by iron salts. These observations on the experimental animal are in keeping with the clinical observations given in this paper: in both the gastrectomised dog and the pregnant woman the absence of the normal gastric acidity appears to be the most important determining factor in the development of hypochromic anæmia.

In our group of 45 women who passed through pregnancy without exhibiting any anæmia, it is important to note that a normal gastric secretion was found in all As Castle and Strauss showed, there is quite a definite although temporary reduction in acidity, especially in the third trimester, but this is replaced by a return to normal in the puerperium. While our patients demonstrated this change, none showed any permanent reduction The reduction in acidity might be enough to result in a temporary state of achlorhydria, as in two of our cases, but this appears to be uncommon. Gastric analysis *performed during the third trimester* would not *give* an exact portrait of the normal secretion, and an achlorhydria found at that would not of necessity be present in the pu

On the other hand, the patients we examined found to be anæmic did show a high anacidity, and this abnormality was present in 2 of the 26—achlorhydria *in* 15, and hy in 8. The analysis from which these figures calculated were done some months after in 20, and in the puerperium in 6, when the juice would *normally* be at its highest

Achlorhydria or hypochlorhydria in thes must therefore indicate a permanent change gastric secretion. We believe *that* the these patients is due *in the main to the* long gastric deficiency. The gastric anacidity in a *poor absorption* of iron, and when pregnan for an extra amount of *available iron* the n hæmoglobin manufacture fails and anæmia de

Second in importance to the gastric secr the diet Restriction of iron-containing foo a long period of time will cause material d of the iron stores, and the increased dem pregnancy may precipitate an anæmia even *presence of a* normal acidity. In our one cas possessed a good secretion of HCl and in w anæmia developed, the diet had been inadequ the mother was burdened with twins. A poor common in patients with achlorhydria In th of 26 who showed anæmia, 18 gave a history o diet, while of the 45 who showed no anæmia was only poor in three.

While *the need of the pregnant* woman *abundance* of essential substances is fully it *is* possible *that* the increasing importanc to *the treatment* of the toxæmias of pregnan their very early recognition has resulted in t *a readiness to* advise restrictions in diet Co due to *anæmia* might be easily regarded a symptoms of toxæmia, and all iron-containin might be withheld when the need is greatest anæmia during pregnancy can be responsible fatigue and distress, and the complications o nancy would always be more serious in a pers anæmia. As Whitby[5] has rightly maintai hæmoglobin determination *during pregnancy* be well *repaid by the success of treatment*

The liberal use of iron, either in a good die *the administration* of the salts in sufficient will prevent the development of this anæm would not be impossible to forestall its ap Knowing that the intake of iron is poor a patient possibly already a mother of many c a course of iron during her pregnancy would good supply for the fœtus without depleti maternal stores.

The testing of *gastric function* in pregna anæmia is *present* is of *more* than academic and the presence of a permanent achlorhydria be a sufficient explanation for the anæmia, as being an assurance of the benefit of iron therap

SUMMARY

1. There is no significant change in the hæm and red cell counts of normal women during preg

2. The gastric secretion is usually normal in who show no anæmia during pregnancy.

3. The reduction in gastric acidity during p is only a temporary phenomenon, and a analysis conducted within the third trimester indication of the usual gastric secretion

Women showing a permanent hypochlorhydria or lorhydria are apt to develop a hypochromic mia during or after pregnancy

This hypochromic anæmia is easily corrected h iron and is probably an iron deficiency state

In the majority this anæmia is a consequence of impaired gastric secretion

Multiple pregnancies, menorrhagia, and a diet cient in iron will ultimately produce a picture ntical with "achlorhydric anæmia"

Knowing the determining factors, it should be sible to prevent both the development of this pochromic anæmia during pregnancy and its rrence in future pregnancies

t gives us pleasure to acknowledge our thanks to ne Louise McIlroy for her permission to investigate ents under her care

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RURAL MONOPLEGIA OF CORTICAL ORIGIN

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recent years attention has been increasingly cted to the clinical syndromes which result from blocking of certain of the cerebral arteries In exhaustive review published in 1930 Critchley[1] ribes the effects produced by occlusion of the rior cerebral artery and its several branches

he anterior cerebral artery is one of the terminal sions of the internal carotid This artery supplies t of the cerebral cortex on the inner surface of hemisphere (see Fig 1) including the "leg area" he motor and sensory cortex In addition to the nches given to the cortex, there is a deep branch Heubner's artery) which penetrates the anterior forated substance and supplies the anterior limb he internal capsule and adjacent parts of the l ganglia

cclusion of the anterior cerebral artery at its gin causes mental disturbances which are most nounced when the side affected is that on which speech mechanism for the patient depends iplegia also results, but the weakness affects lower extremity to a greater degree than the er extremity or face When occlusion of the el occurs in the latter part of its course, the lting paralysis may affect only the lower extremity he opposite side When the paracentral branch he anterior cerebral artery is alone involved ning occurs only in the paracentral lobule and ural monoplegia results with little accompanying bral disturbance A clear case of this type was rted by Long in 1905[2]

male aged 72, five years before his death developed en weakness of the left lower extremity which ed for the remainder of his life At post mortem mination degeneration of the right paracentral lobule ound.

G Wilson[3] described a similar case in 1923 In his patient there was great œdema of the affected right lower extremity Post mortem examination showed softening in the opposite paracentral lobule Winkelman[4] in 1924 demonstrated a similar case

When as in these cases occlusion of the paracentral branch of the anterior cerebral artery occurs, the sudden onset of inability to move one leg may lead to considerable diagnostic uncertainty Thus Wilson's case was associated with swelling of the extremity and eversion of the foot, and was considered by different physicians to be due to phlebitis fracture of the neck of the femur, and a spinal lesion The condition may also be mistaken for hysterical paralysis or may be considered due to disseminated sclerosis In young patients the latter mistake is that most likely to be made by the neurologist. The following records illustrate some of the difficulties which may arise

CASE 1.—A rubber worker, aged 60, was admitted to hospital on Feb 8th, 1934, on account of pleurisy which had been present for seven days The patient stated that he was up and walking about the previous evening but that when his doctor examined him on the morning of admission he was unable to move his left leg He stated in reply to questions that otherwise he felt well, and that he had not experienced headache, confusion, or dizziness

Examination revealed almost complete paralysis of the left lower extremity Slight movement was possible at the hip, but none at the knee or ankle There was no sensory loss to light touch pin prick, or temperature on either lower extremity Vibration sense was preserved, but there was slight loss of the appreciation of passive movements in the great toe of the left side The knee- and ankle-jerks on the left side were slightly more active than on the right The plantar response was extensor on the left, but flexor on the right The abdominal reflexes were not elicited and there was no abnormality of the motor or sensory functions of the upper extremities or face There was no demonstrable disturbance of the higher cerebral functions The patient was right handed but left footed The blood pressure was 110/68 mm Hg There was thickening of the radial arteries but the retinal vessels showed little abnormality

A case such as this does not at first sight suggest a cerebral lesion, but further details with regard to the mode of onset of the weakness make the diagnosis clear In this case the patient's wife gave the additional information

She stated that on the evening previous to admission her husband was walking normally, and had indeed done more than on any day since his illness began a week previously At 5 o'clock on the morning of admission she heard him groaning, and found him in a slightly confused state He did not appear to understand fully what was said to him, and his speech was slow and laboured Two hours later he was noticed to have difficulty in calling one of his sons by name, and later he had incontinence of urine

This additional information showed in the first place that the weakness had developed rapidly, and in the second place that there had been some associated mental confusion It is therefore justifiable to conclude that the monoplegia was caused by the occlusion of a cerebral vessel and the vessel affected can only be the right anterior cerebral artery in the latter part of its course or possibly the paracentral branch alone (See below for post mortem report)

CASE 2 —Mrs B aged 4[illegible], was admitted to hospital on Jan [illegible]th, 193[illegible] on account of weakness of the left l[illegible] When examined a week later she stated that on the morning of admission she suddenly lost power in the left leg She stated that otherwise she felt well and had no headache or dizziness

Examination showed great weakness of the left lower extremity, [illegible] affected. Movements of the extremity were very incoördinate, and there was complete loss of position sense of all parts of the limb. There was no impairment of the appreciation of light touch, pin-prick, temperature, or vibration. The knee- and ankle-jerks were more active on the left side. The plantar response was extensor on the left side, but flexor on the right No abnormality of the abdominal or arm reflexes was demonstrable. There was no weakness of either upper extremity, but there was slight inaccuracy of the finger-nose test on the left side *with the eyes closed* There was no definite facial weakness. The higher cerebral functions were normal, and the patient was right-handed. Ophthalmoscopic examination showed slight retinal arterio-sclerosis, and the blood pressure on admission was 190/100 mm. The strength of the affected leg had improved considerably since admission

In the course of a rapid examination it was at first supposed that the paralysis was due to a spinal plaque of disseminated sclerosis, but there was one serious objection to this view, and that was the gross loss of position sense while vibration sense was normally appreciated As in Case 1 a more detailed history indicated the cerebral site of the lesion

When cross-examined the patient admitted that the weakness came on with great suddenness some minutes after she had got up in the morning She said further, that at the time it came on she felt light-headed and faint She felt a little confused, but there was no headache or loss of consciousness There was no twitching of the leg, but it felt cold, and she could not tell whether or not she was wearing a stocking on the affected leg. Further, the doctor who examined her shortly after the weakness developed stated that she seemed to be confused and talked rather stupidly. Her childish behaviour was also noticed after admission to hospital, and this had raised the possibility that there might be a functional element in the case.

Progress—In Case 1 there was no loss of position sense in the affected extremity, and complete recovery with return of normal reflexes occurred in the course of three weeks In Case 2, in which loss of position sense was complete, improvement was slow, and a degree of weakness will probably be permanent.

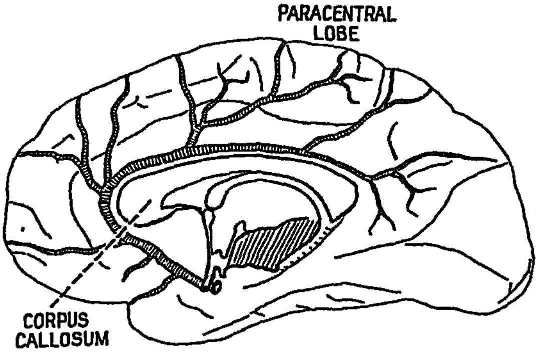

FIG. 1.—The anterior cerebral artery.

CONCLUSIONS

These cases illustrate the importance of considering the possibility of cortical vascular occlusion in cases of crural monoplegia The sudden onset, if an accurate history can be obtained, is in itself significant Associated mental confusion was present in both of the above cases, but was so slight that it was barely noticed by the patient. "Cortical sensory loss" may be marked, as in Case 2, but vibration sense is retained. In neither case was there any lasting impairment of the higher cerebral functions, and in Case 1 complete recovery of power occurred in the course of a period of three weeks The loss of p sense in Case 2 makes the prognosis less favour

ADDENDUM

Post-mortem report—After this paper was the first patient (Case 1) died suddenly coronary thrombosis on Oct 30th. A post- examination was carried out and Dr. J H. Biggart examined the brain. He kindly provided the following report.

The brain shows a depressed area in the superior frontal convolution of the right hemisphere. This is about an inch in diameter and is situated midway between the Rolandic fissure and the frontal pole. The meninges covering the depression are a little thickened and show a faint brown discoloration. The meninges over the rest of the brain are normal The vessels at the base are thickened and somewhat atheromatous. On sagittal section the depression is found to extend medial surface of the right hemisphere Here it is wedge-shaped, and reaches as far as the of the corpus callosum (Fig 2)

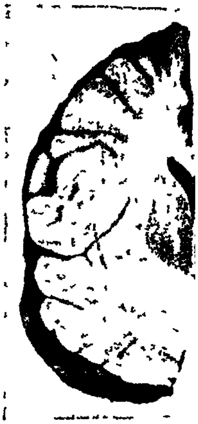

FIG 3 — Transverse through the lesion absence of cortex o superior frontal and convolutions.

Fig 2 shows the branches of the right anterior artery in this case The fronto-polar branch is supply a more extensive area than usual, its extending as far as the motor cortex, whilst the marginal branch is represented by a small vessel soon disappears on the surface of the depre The large supply of the fronto-polar branch may be due to anastomotic hypertrophy following a the calloso-marginal vessel.

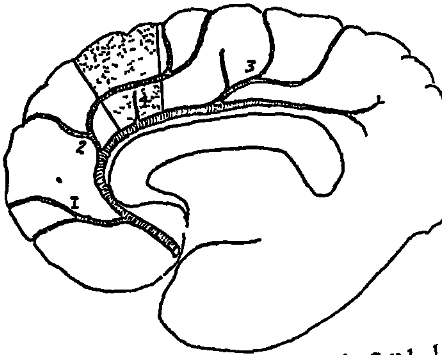

FIG 2—The anterior cerebral artery in Case 1. 1 branch 2. Fronto-polar branch 3 Paracallosal 4 Small calloso-marginal branch The stipp represents the site and extent of the lesion.

Transverse section through the area of brain (Fig 3) shows that the cortex of the superior convolution and of part of the cingulate convolut disappeared and that the white matter is only from the meninges by a narrow band of yellowish translucent glial tissue

There are no other macroscopic lesions in the The findings are obviously the result of a thr occurring in the distribution of a branch of the anterior cerebral. This probably occurred in the marginal vessel.

I am indebted to Dr. A Fergus Hewat and

Murray Lyon respectively for permission to report ses 1 and 2

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SCLEROSING SOLUTIONS FOR VARICOSE VEINS

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IDEALLY, a solution for sclerosing varicose veins ould cause an obliterative endophlebitis over a limited length of selected vein without producing y subjective symptoms in the patient This would ail the use of a chemical which is non toxic in atively large quantities and which has a selective ect on endothelium, and neither of these qualities likely to be found in any sclerosing agent In y case it is impossible to imagine the physiohological processes involved in the conversion of otent vein into a fibrous cord going on without least some inconvenience to the patient

But if the gap between these criteria and the results ained with solutions at present in use may never bridged, there is little doubt that in time it will considerably narrowed Other features of the al solution, such as ease of preparation and cheapss, however desirable, must be regarded as of ondary importance

No attempt will be made here to refer to all the ious solutions which have been used by different rkers, of which an excellent review is given by Latchie[1], many of them are now of historic erest only Attention will be confined to agents common use

Sodium salicylate—This salt introduced by Sicard,[2] o deserves great credit for consolidating a treatnt which is of inestimable benefit to mankind, is first to have stood the test of time Used in 20 and 40 per cent solution, it is dependable in its ets, though in my hands not so certain as quinine disadvantages are (a) it produces painful cramp nediately after injection, which, though of minor nificance to its advocates, appears to be of some portance from the patient's point of view (b) it ily produces sloughs if allowed to escape into the avenous tissues, (c) it does not keep well unless pensed in special iron free glass ampoules Lithium icylate appears to be comparable to the sodium t

odium chloride first introduced by Linser[3] is very iable in its effects I have used it in saturated ution without any effect on the vein, though aker solutions have at times caused most severe ctions This salt also causes cramp, and extraious escape gives rise to sloughs Also its use does appear to be safe from the risks of embolism

Equal parts of 25 per cent sodium salicylate and per cent sodium chloride have been used by isen[4] I have used various mixtures of these two ts without being impressed by the results, this ation combines the disadvantages of its stituents.

ugars—In 1925 Remenovsky and Kantor[5] introed 50 per cent glucose and in the following year ld[6] advocated a mixture of glucose and levulose Sugar solutions have been popular in America, being recommended especially for small veins and, mixed with sodium chloride for larger varices (McPheeters Merkert, and Lundblad[7]) Invertose and cane-sugar have also been pressed into service I have no personal experience of sugar solutions, but they have the advantage of being painless on injection and usable in large quantities, further they do not readily cause sloughs On the other hand, they appear to be uncertain in their action and by no means free from the danger of causing embolism

Sodium morrhuate[8]—This is a combination of sodium with the fatty acids found in cod-liver oil, used in strengths of 5 and 10 per cent It appears to be rather an indefinite chemical combination, different samples varying considerably in colour It has been much used of late and has been recommended as a "froth" for small dilated veins found in the skin the injection of which is liable to be followed by sloughing when some other solutions are used

Except in the case of the smaller veins, I have found sodium morrhuate very disappointing and in my experience its use has frequently been followed by red and tender swelling of the thrombosed veins which has taken three or four or more weeks to subside Biegeleisen[9] found wide variations in the efficiency of different samples, and has started using a 5 per cent solution of pure sodium oleate

Quinine—The use of quinine to produce a therapeutic *endophlebitis is due to Génévrier*[10] The solution associated with his name consists of 13 3 per cent neutral quinine hydrochloride with added urethane, the only appreciable effect of the latter being to dissolve the former In the opinion of many this is the most dependable in common use and I have certainly found it so It is painless on injection, having no tendency to give rise to cramps, but at times causes rather severe reactions and if it finds its way outside the vein has a decided tendency to cause sloughing Minor disadvantages are that it does not keep well unless put up in ampoules and that it tends to crystallise out and therefore has to be warmed before use

Weaker solutions have been employed and I have personally found 5 per cent quinine hydrochloride the optimum strength for all round use Larger amounts of this strength have of course to be injected, the maximum at any sitting being 8 or 9 c cm, but even with this weaker solution undue reactions sometimes result when considerable lengths of vein are thrombosed

In order to cut out the effect of the acid radicle, quinine alkaloid was used in a number of cases Quinine-mannitol, consisting of 12 per cent quinine base dissolved in a solution of mannite was found to be very poor in producing sclerosis, but when positive results were obtained, reaction was for all practical purposes nil From this it was concluded that some of the inflammatory results of Génévrier's solution might be due to the hydrochloric radicle, and that quinine to be effective, had to be presented in an ionised form

Accordingly another salt was looked for and quinine lactate was chosen in the hope that the acid radicle in this case being a normal constituent of the body arising from katabolic processes would not be so likely to act as an irritant This salt has been employed in 10 per cent, 15 per cent, and saturated solutions (16 per cent) Since January 1931 I have used it on 170 new hospital patients as well as giving it to others whose treatment had been started with the hydrochloride and to private patients

The average number of injections in a random selection of cases was found to be 11, so that I must have used it in well over 1500 injections I think therefore I have seen enough of its effects to form definite conclusions as to its value

It appears to be as efficient as Génévrier's solution, forms a hard adherent clot, and is painless on injection. "Reactions" do occur but on the whole they are less severe than with the hydrochloride, and no case of the severe type of reaction occasionally seen with Génévrier's solution has come under my notice On the other hand, it is not uncommon to find fairly large veins becoming thrombosed with a minimum amount of tenderness and subjective discomfort. As a rule it may be safely used for "skin" veins around the ankle and elsewhere without fear of undesirable effects In legs where nutrition of the tissues is severely affected sloughing may occur if the solution is given extravenously, but the resulting ulcers are very small, and in limbs of good or fair nutrition I have not yet seen an ulcer develop. It rarely causes residual pigmentation along the sclerosed vein

There does not appear to be much point in using the lactate in anything but the saturated solution, so that its preparation is simplicity itself, excess of the powder being added to a bottle of water. The dose of this for each injection varies from 0 25 c cm. upwards, a full 3 c cm being occasionally necessary in large veins Three c.cm. is as a rule the maximum amount that can be given at one sitting, though some people stand 4 c cm without any general effect The solution has been kept for several weeks without any change in its appearance or sclerosing powers It may be added here that quinine lactate is also effective in the injection treatment of enlarged bursæ and other cavities lined by endothelium.

Dr. Felix Smith has kindly carried out experiments on its germicidal powers and these show that it is self-sterilising.

NOTE BY DR. FELIX SMITH

The efficiency of quinine lactate as an antiseptic was tested in the usual way, by its bactericidal action upon streptococci and *B coli* It was found that non-hæmolytic streptococci are prevented from growing in bouillon containing 0·5 per cent and *B. coli* in bouillon containing 0 85 per cent of quinine lactate The same cultures were tested with carbolic acid and this was found to have a bactericidal power only five times that of quinine lactate The latter is therefore clearly self-sterilising in strengths above 1 per cent.

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OVERCROWDED UNIVERSITIES IN HOLLAND—We learn from *Bruxelles-medical* that the Netherlands Government have set up a commission, consisting of University professors and other well-known persons, to see what can be done to remedy the excessive entry of students at the Dutch universities and to limit the number of diplomas granted

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Clinical and Laboratory No

SUBACUTE RHEUMATISM DUE TO A PNEUMOCOCCUS

BY NAJIB FARAH, M.D.
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IN previous papers [1] I have endeavoured to the pneumococcus as a primary causal agent in rheumatism. While awaiting the results of fu investigations I propose to report an interesting of subacute rheumatism, due to p infection, which has been under my care for the ten years

CLINICAL RECORD

The patient, aged 40, is an expert agriculturist, four children, all healthy, but two of them with en tonsils There is no history of syphilis, malaria, dysentery, or tuberculosis He has never pneumonia or rheumatism; but repeated sore necessitated removal of the tonsils at the age of 1 he has had similar attacks since then, though not so or frequent

In February, 1924, when 31 years of age, he had a sore-throat complicated by bronchitis In April, 50 days later, there was a sudden onset of articular rheumatism in the right knee with fever from 37° to 38° C (98 5° to 100 5° F.) for a few The joint was red, swollen, and tender, the swelling mostly due to effusion, but partly to No other joint was implicated, nothing abnormal found in the heart; the throat was slightly red prescribed a gargle and salicylates internally, with wintergreen over the knee-joint The pain was relieved and the inflammation abated within three with total resolution, the joint resuming its normal

In July, 1924, without any complaint of sore the left knee was suddenly involved in the same The temperature rarely exceeded 38° C , no at could be detected elsewhere, and the heart undamaged. Salicylates were again prescribed, and 20 days recovery was complete A stock vacci given, and also injections of colloidal sulphur by a tioner in Cairo with the object of preventing a rec

In December, 1925, he had a sore-throat, and three later the right knee-joint was affected in the same as before, again with slight fever; later the migrated to the left wrist Intravenous injection iodaseptine were given, with salicylates internally patient was soon relieved and had no more attack about a year. In February, 1927, however, after a initial sore-throat the right knee was again implic being also relieved by salicylates The patient intravenous medication and, worried by these rel consulted several other practitioners, who pres various remedies

From that time until February, 1933, there were occasional attacks of the same kind, more or less migrating from one joint to another, occasionally by sore-throat or coryza; involving sometimes the the knees, the wrists and fingers, and sometimes shoulder-joints, occasionally being localised in even three joints at the same time The always relieved by salicylates, and once the inflamm had subsided the joints resumed their normal a

On Feb 24th an attack more generalised than the with an initial temperature of 37 8° C (100° F), ca The manifestations were the same except that the no sore-throat This time, however, six joints involved simultaneously—the ankles, the knees, the wrist, and the right metatarso-phalangeal of the vere red and tender and swollen—especially the knees, ro there was much effusion On examination I found pulse rate 100, regular, the apex beat was not laced and no murmurs were heard, an electrocardio n proved normal in all three leads Nothing abnormal found in the chest, abdomen, or the central nervous m The gum over the first molar tooth, which had filled 25 years previously and refilled in 1927 and , was red and tender, and the patient reported that d been so from time to time during the past few years xamination by a dentist and with X rays, however, ing was found wrong with it The throat was red, remnants of the tonsils were inflamed with a few e spots Smears and cultures were made from these, the patient refused exploratory puncture of the joints iography showed nothing abnormal either in bone or lage

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[1] Presse méd d'Égypte, August 1st, 1933, p 231, a the Society of Tropical Medicine and Hygiene of E Nov. 3rd, 1933, and Feb 2nd, 1934 (Compt. rend, 1 i, 4, 26, and 145).

LABORATORY FINDINGS

xamination of the cultures from the tonsils showed imococci in large numbers with sarcinæ, *Diplococcus rhalis*, and saprophytes The pneumococcus was of III (Behring) agglutinable in the patient's serum dilution of 1 2000 Blood culture on ordinary broth on the third day pure colonies of pneumococcus, ures on bile medium were negative cultures made n on "T" broth and Marmorek medium also gave colonies of *Diplococcus pneumoniæ* (Gram positive, shaped, grouped in two, three or four, and also in t chains frequently taken for streptococci, at times ounded by a hazy capsule slightly disturbing the h) Streaked on "T" agar medium, the organism s small and minute transparent and semi transparent ightly opaque colonies very often like droplets of fluid lood-agar it transforms the hæmoglobin into methæmo- in, fermenting glucose, lactose, saccharose inulin but salicin and mannitol, and curdling milk and Barsikow s um Neufeld's test was positive, the organism was ble in rabbit s bile—a differential point between the imococcus and the streptococcus, the latter being ecomposed by bile The agglutination test proved ely positive, the patient's serum contained specific utins, against his own pneumococcus at a dilution of 000 Under treatment this agglutinating power tly decreased On typing (with Behring sera) the ted pneumococcus was of Type III at a dilution of 00, but possessed *accessory* antigens of Types I and since it was also agglutinable in sera I and II at ions of 1 100

a blood count during this attack the following readings obtained erythrocytes, 4,600 000, hæmoglobin, per cent, leucocytes 10 500 (polymorphonuclear er cent, transitional 1 per cent, eosinophils 1 per , lymphocytes 17 per cent) The number of leuco s (Schilling hæmogram) was found to be somewhat during the attacks, with a characteristic increase of ature polymorphonuclear cells, and a shift to the indicative of the infective nature of the disease mation of blood contents showed chlorides 0 60 per , urea, 0 02 per cent, uric acid 0·005 per cent lesterol, 0 25 per cent, glucose 0 072 per cent n, 0 70 per cent (when the patient recovered it fell 35), pH 7 348, alkaline reserve 57 17, sedimenta rate (Westergren method); reading after one hour, mm, later, when the patient was apparently well, mm

taneous abrasion tests were performed with the wing antigens tuberculin (Pirquet) streptococcus hylococcus, enterococcus *Bacillus coli*, and the patient's pneumococcus All were negative except the last, h demonstrated the patient s supersensitiveness to own antigen A red area appeared within an hour wed by an urticarial weal, and the reaction was still ent 24 hours later Subcutaneous injections of one three, and five million dead pneumococci were made aseptic precautions at intervals of three days and les evoking a mild general reaction they produced lly an inflammatory swelling with reddening of the and pronounced œdema Three weeks later there a sterile abscess at the site of the first injection and inflammatory œdema at the other sites took from four welve weeks to disappear Meanwhile desensitisation tment had been undertaken with the antigen, and the local reactions were gradually much reduced although the doses towards the end were from 10,000 to 20,000 millions of organisms

On injecting the pneumococcus into animals it seemed at first to be avirulent even in large doses A guinea pig inoculated intraperitoneally on March 2nd 1933 with 5 c cm of 24 hours broth culture showed no signs of illness until May 17th when it began to lose weight, it died on May 21st—that is, 80 days after the inoculation Post mortem cultures from the heart, liver, and spleen gave 24 hours later pure colonies of a pneumococcus which was found to belong to Type III at a dilution of 1 400 It was also agglutinable in sera I and II at a dilution of 1 100

DISCUSSION

The question arises how closely this illness—undoubtedly caused by a pneumococcus—was related to the acute rheumatism or rheumatic fever ordinarily seen in children The patient was within the recognised age limit, and the rheumatic manifestations followed an initial severe sore throat, as is usual in acute rheumatism The quiescent period was long (about 50 days) in the first attack, but later much shorter The development of the illness, with its transient and migratory arthritis and its moderate fever, with subsequent complete resolution of the inflammatory process, are all in favour of a diagnosis of true acute articular rheumatism (subacute type) Even after ten years radiography showed no bony or cartilaginous lesions, whereas in arthropathies of pneumococcal origin, as hitherto described, the lesions are apt to be obstinate and destructive with ankylosis, and not infrequently suppuration It is true that no cardiac alterations could be detected, but the patient was 31 years of age when first attacked and was thus less likely to sustain damage to the heart The Type III pneumococcus recovered from the blood was the same as that isolated from the tonsils, and both of them were agglutinated by the patient s own serum In this patient, at any rate, the rheumatic trouble was due to a direct infection with the organism found in the throat and was not a toxic or allergic manifestation It is remarkable that whereas agglutination is seldom obtained in pneumonia at dilutions of more than 1 : 40 or 1 50, being greatest about the time of the crisis, it was obtained in this case (of nine years' standing) at a dilution of 1 2000 The agglutinating power of the serum decreased during the patient's *recovery, and this could not be regarded as complete until all agglutinating power was lost* The cutaneous and subcutaneous reactions (bacterial local allergy) were also characteristic, while the evident efficacy of salicylates also suggests that the case should be considered one of true subacute rheumatic infection On the other hand, one must not lose sight of the fact that the histological lesions in arthritis of pneumococcal origin often assume the same features as those of genuine acute articular rheumatism—i e they are transient, with serous effusion and without grave general reactions even when there is suppuration and they are sensitive to the effects of salicylates All depends in this condition upon the character and the pathogenicity of the pneumococcus involved and upon the local and general reactions of the person infected Further, the seasonal ascending curve of acute rheumatism seems to be parallel with that of acute pneumococcal infections

CONCLUSIONS

(1) The present case tends to demonstrate that acute rheumatism may be of pneumococcal origin (2) The disease would be then a [illegible] syndrome in predisposed (or sensitised) [illegible], with largely cardio-arthropathic [illegible]

variable clinical aspects according to the general and local reactions in situ of the infecting organism, and its pathogenicity and character. (3) This pneumococcal septicæmia would ordinarily start in a focal infection—mainly in the form of a pneumococcal sore-throat—localised in the upper air-passages where the pneumococcus has its natural habitat and where it exists constantly on the surface of the tonsils (4) As the pneumococcus often assumes the aspect of well-rounded cocci or bacilli, so that the keenest observer may take it for a diplo-, strepto-, or staphylo-coccus or even for a bacillus (a fact pointed out by Marchoux), a careful examination is necessary for its identification.

I would like to thank Dr J Papadopoulo, director of the bacteriological laboratories of the Anglo-Swiss Hospital, for his valuable coöperation in laboratory researches, and also Dr G. Stamabopoulo for furnishing me with agglutinating sera for typing the pneumococcus

Alexandria, Egypt

CASE OF POIKILODERMA OF JACOBI WITH COMPLICATIONS

By A. G. Cross, M B. Camb.

RECENTLY HOUSE PHYSICIAN TO THE MEDICAL UNIT, ST MARY'S HOSPITAL, LONDON

UNDER the title of poikiloderma, Jacobi,[1] in 1907, described for the first time a disorder characterised by hyperpigmentation and depigmentation scattered over the whole skin area, with telangiectasis and ulcerative lesions There may be pruritus, especially in the early stages, and later the skin may be so thickened as to be indistinguishable from scleroderma. Cases have been recorded in which the dermal changes were accompanied by sclerodactylia, myositis fibrosa, and calcinosis [2]

The following is an example of this disease in which sclerodactylia and myositis fibrosa were present and in which calcification was limited to the pleuræ It is that of a woman aged 43, who was under observation at St Mary's Hospital, Paddington, between Sept. 18th, 1933, and Feb. 24th, 1934.

CLINICAL HISTORY

According to her story the onset was in November, 1929, when she noticed a burning irritation in her skin and that it was becoming darker in colour. She continued with her work, in domestic service, until March, 1930, when she had an attack of pleurisy, characterised by pain on the left side of the chest, and no effusion At this time the skin had become quite dark and appeared "shiny," but the irritation was less She gave up her work and had lived at home since

In November, 1930, she was admitted to a general hospital for investigation The Wassermann reaction was negative at this time. There was little improvement in her condition and the diagnosis remained in doubt She had further attacks of pleurisy in October, 1931, during the summer of 1932, in December, 1932, and in March, 1933 These were similar in nature to the first attack except the last which was bilateral In March, 1933, the skin began to get more tight and the fingers to contract In April, 1933, she was treated with massage and ultra-violet light without benefit Since November, 1929, there had been almost continuous diarrhœa, with large, offensive stools containing bright yellow lumps. Since March, 1931, she had had increasing muscular weakness and her weight had dropped from 9 st to 6 st 7 lb

On admission she was found to be a small, poorly nourished woman with the characteristic drawn features of scleroderma and widespread pigmentation suggesting that of Addison's disease. The pigmentation was distributed over the whole body in areas of varying mingled with other small areas where the skin to be of normal colour and still others where it was pale, and atrophic. There were chronic ulcerative on the point of the right elbow, and on the dorsal the left foot, and small telangiectases on the face. scleroderma was particularly marked in the arm affected the face also Sclerodactylia was pron both hands The mucous membrane of the mouth pigmented, but the mouth could only be opened limited degree because of the scleroderma The especially those of the upper arm, were very hard. myositis fibrosa Examination of the lungs of cavity at both bases, together with obvious dull limitation of movement in the same areas estimation of the blood pressure was difficult be the unyielding condition of the skin, the following were obtained :—

Arm Systolic, 100 mm Hg. Diastolic, 65 mm
Thigh. Systolic, 108 mm Hg. Diastolic, 75 mm

The urine contained bile salts and bile pigments not otherwise abnormal The stools were copious, and offensive.

SPECIAL INVESTIGATIONS

Histological examination of the skin excess tion and changes characteristic of scleroderma Muende).

Fat analysis of fæces: Total fat, 60 5 per cent, fatty acid, 9 0 per cent, neutral fat, 4 0 per cent, 47 5 per cent. This indicated faulty fat absorption than deficient breakdown by pancreatic secretion

Diastase index. 40. Icteric index. 34 5 Va Bergh reaction direct biphasic Serum calcium mg per 100 c cm Plasma inorganic phosphorus per 100 c cm Plasma phosphatase · 0 190 unit (100 c.cm Wassermann reaction · negative

On X ray examination dense shadowing was both pulmonary bases, especially the left, probably calcified plaques in the pleura In addition the much shadowing at the right base, the nature opacity was uncertain, but might be due to th pleura After lipiodol injection the upper right appeared to be normal The lower bronchi of had a compressed appearance. The lipiodol did not the bronchioles in the normal manner, a feature explained by the lack of expansion of the lungs Th no radiological evidence of calcium deposits in tissues.

Treatment by Eucortone in 2 c cm doses subcutaneously, and later increased to 4 c cm improved the patient's sense of well-being skin became less pigmented and looser, freer range of movement The blood improved and on discharge was —thigh 124 mm Hg; diastolic, 86 mm Hg There gain of weight of 4 lb. during her stay in hosp

DISCUSSION

The relationship between poikiloderma, fibrosa, sclerodactylia, and calcinosis has bee viously recorded.[2] This case is of interest in th calcification has occurred in the pleura Inve has shown that there is no abnormality of metabolism, and in this respect the condition to calcinosis [3]

Nixon,[4] in 1907, described four cases of sclero associated with myositis fibrosa, and drew th clusion that they were both manifestation general condition Other observers have point the connexion between dermatomyositis, sclero calcinosis, and myositis fibrosa [5–8] It seem patients with acute dermatomyositis, if they may develop scleroderma and myositis fibro therefore that the two latter conditions repre chronic state of the former. In cases of cal roderma is often present, myositis fibrosa may be nd, and a papulo-erythematous eruption may occur he onset

Apparently this case started with an acute phase be followed later by the chronic manifestations of mal fibrosis and atrophy, and contraction of the en, hardening of the muscles, and calcification of the ira It is thought worthy of record because, the dition is so rare, because it was associated with ification of the pleura (which, apparently, has not herto been described), and because of the bearing as on the contention that scleroderma, calcinosis, myositis fibrosa are related disorders which may t in an acute phase as *dermatomyositis* It provides a reason for the inclusion of the poikiloderma of Jacobi in the same group of disorders

I wish to express my thanks to Prof F S Langmead, under whom the case was admitted to hospital, for permission to publish it, and for his help in the preparation of this article, and to Dr Harrison Orton for the radiological reports

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MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF SURGERY

T a meeting of this section held on Nov 7th **Philip Turner** gave his presidential address on

Unusual Perforations

said that acute abdominal *cases could* be ded into two groups (a) "abdominal emer- ncies"—i e., events calling for immediate action, (b) "abdominal urgencies"—events calling for ediate attention In an abdominal emergency condition called for immediate or early operation a life saving measure without X ray or other ninations or investigations, and often without a ble history, hence the operation is often oratory, the suspected lesion was not always d, and a cause had to be searched for under litions of great stress and difficulty

t an abdominal urgency, though symptoms might both acute and grave operation was not ediately indicated, and an interval for observa- and investigation would usually allow of an rate diagnosis The type of perforation to be ussed was that which would give rise to a true rgency Perforation of an abdominal viscus generally characterised by a very sudden and o onset, severe symptoms collapse and typical minal signs Before dealing with unusual perfora- , Mr Turner discussed briefly the more usual , notably of gastric and duodenal ulcers, and he appendix, quoting a case which presented ical clinical pictures When injury was the al exciting cause of the perforation the resulting gency might be regarded as rupture of an minal viscus until operation revealed the true ation

rtain ulcerations of the intestine might perforate cause an emergency strongly resembling perfora of a gastric ulcer In typhoid fever now a paratively rare disease, cases of perforation very seldom seen In ambulatory typhoid, e the symptoms were so mild that the patient nued to get about and even to work the first ation that anything was wrong might be the en onset of all the signs and symptoms of an emergency An important and not uncommon of an emergency might arise in cases of diverti is of the colon due to ulceration of a concretion gh the thin wall of the diverticulum perforation might occur in a Meckel's diverti In Various causes had been recorded—a typhoid tuberculous ulcer, and ulceration set up by a gn body A point of very great interest was that in this situation perforation of an ulcer of the type of an acute peptic ulcer was sometimes met with Meckel's diverticulum usually contained mucous membrane of similar structure to that of normal small intestine Occasionally, however gastric mucous membrane containing oxyntic cells was present, in other cases pancreatic tissue has been found The name heterotopia has been given to this very interesting condition of misplacement of normal tissues

Perforation of a Meckel's diverticulum may occur in children Perforations of any sort are very rare in children, a perforated gastric ulcer being almost unknown Mr Turner described a case of a perforated peptic ulcer of a diverticulum in a boy aged 3¼ years, who was admitted for severe continuous abdominal pain and vomiting of a day's duration no previous symptoms having occurred

On admission temperature was 102° pulse rate 148 and respirations 50 The child looked extremely ill There was great generalised abdominal pain tenderness and rigidity, but little or no distension There was obviously general peritonitis but the cause of this was uncertain The very acute and sudden onset made it improbable that the appendix was the cause The abdomen was opened by a right paramedian incision and when the peritoneum was incised pus escaped but no free gas The appendix which was inflamed and oedematous but not more so than adjacent coils, was removed Nine inches from the ileocaecal valve was a Meckel's diverticulum surrounded by thick lymph and with one coil of bowel loosely adherent The diverticulum was about 1½ in In length, and about ½ in from its intestinal attachment there was a small perforation about ⅛ in in diameter In the interior of the diverticulum two kinds of mucous membrane were found a proximal portion *continuous with and similar in appearance to,* the mucous membrane of the bowel and a distal portion, thicker and of firmer consistence The perforation which was not surrounded by any thickening or area of inflammatory reaction was actually in the intestinal mucous membrane, but in contact with the thicker distal portion It had the appearance and characters of a perforated peptic ulcer Cultures of the pus gave a mixed growth of *B coli Streptococcus brevis and B welchii* The diverticulum had been examined histologically by Prof G W Nicholson who reported that the proximal mucous membrane had the structure of intestinal mucous membrane while the thicker distal portion had the structure of gastric mucous membrane The boy stood the operation well but developed pneumonia with empyema and threatened cardiac failure Later an intestinal fecal fistula developed and after a further operation the patient succumbed

In cases of heterotopia haemorrhage from the bowel is not unusual and the absence of this or other previous abdominal symptoms in this case was noteworthy

Mr Harold Edwards had recorded a case of perforation in a remarkable diverticulum of the small intestine which he regarded as an instance of reduplication.

The boy, who was 16 years old when the emergency occurred, had suffered from infancy from severe attacks of abdominal pain, vomiting, and melæna He was admitted as an urgent case after a very severe attack of pain for X ray and other investigations, and the perforation occurred in hospital He was operated on by Mr Edmunds, who found the perforation in a diverticulum 28½ in long, which he excised A Meckel's diverticulum was present on the portion of ileum excised The mucous membrane of the proximal part looked normal to the naked eye In the distal (free) portion the mucosa was thickened and raised to form small polypoid masses. The ulcer was situated in the distal portion 3 in from where it left the mesentery to become free. Histologically the surface layer consisted of columnar mucus-secreting epithelium Beneath this was a closely packed mass of glandular epithelium consisting of cells which exactly resembled the central glands of the gastric tubules At the periphery of many of these glands, between the central cells and the basement membrane, were oxyntic cells

Heterotopia might thus occur in Meckel's diverticulum and also in other congenital diverticula and, though rare, was of definite clinical importance

Perforation might also occur in other rare intestinal diverticula, also with a neoplasm of the intestine or even of the stomach Perforation of a stercoral ulcer was not uncommon, but this was probably a terminal event as was perforation of a malignant ulcer.

Mr Turner described a case of perforation of a carcinoma of the jejunum, of interest, not only on account of its rarity, but because the history and symptoms were so typical that, had it been less rare a correct diagnosis should have been made

Perforation by a swallowed foreign body was uncommon. Provided that they reached the stomach, foreign bodies of the most varied size and shape were usually passed naturally Even an open safety-pin had been known to pass through the alimentary canal of a child without causing any damage, and when foreign bodies remained in the stomach they might be retained for a very long time without doing any harm.

A perforation of the urinary organs might sometimes be the unsuspected cause of an abdominal emergency, for example, a perforation in the bladder as the result of injury or ulceration in a pouch

Mr. Turner recalled a remarkable case which he had previously described of rupture, apparently spontaneous, but probably really traumatic, of a hydronephrotic single kidney into the peritoneal cavity

An extremely important and easily overlooked perforation was that in the posterior fornix in attempts to procure abortion As the result of this there would be diffuse pelvic peritonitis spreading up to the general cavity. Nearly always in such cases a misleading history would be given, and a diagnosis of appendicitis or of suppuration spreading from the tubes might be made

SECTION OF OPHTHALMOLOGY

AT the meeting of the section held on Nov 9th, with Mr RANSOM PICKARD in the chair, Mr F. W LAW read a paper on

Pre-operative Preparation of the Conjunctival Sac by Ultra-violet Rays

Patients awaiting intra-ocular operations, he said, harboured micro-organisms which were either actually or potentially pathogenic, and would certainly be pathogenic if introduced into the eye He spoke of preparation rather than of sterilisation becau the destruction or removal of all the conjun flora was not necessary, and (2) irradiation o conjunctiva did not usually result in a sterile pathogenic organisms being more susceptible to agency than the non-pathogenic ones Most pa who had been referred to him for irradiation cases where ordinary methods of pre preparation had failed. In all but a few the un able organisms had resisted the action of antis lotions, and in some silver nitrate had been a with the object of rendering the conj surgically clean He used a lamp on a mov stand, the head of the patient being secured the lids everted and held in such a way as to the cornea Six sittings of five minutes each two-day intervals, with the lamp placed 12 in the eye were usual, but the number of doses be increased without harm Of a series of 20 pat 8 showed extermination of the pathogenic and a normal convalescence after operation grown from the conjunctiva of one of these had been showing *pneumococci and Staphyl aureus* for six months, all measures of having failed Thirteen exposures rendered th safe for operation Another patient in th in whom a very brief application of the rays was a baby aged 11 months, who required In 3 cases the rays had been successful, but ope had not yet been performed In 2 the conjun sac was rendered sterile but operation had delayed and recontamination took place. suggested that irradiation did not actually de but merely attenuated the organisms, and the growth of fresh ones 2 patients ceased att after receiving two exposures In both the junctival cultures revealed pneumococci, but operations took place One of them had a convalescence, the other developed iridocy and keratitis punctata, but the ultimate result good. In 2 cases, besides being irradiated, the were irrigated with an oxy-cyanide preparation one of them had silver nitrate also The eyes red and irritable, and both these patients discharged without operation In one case the culture taken before operation showed no pa organisms, but after operation the eye be irritable, with cells in the anterior chamber responded to a treatment which included After capsulotomy was done, a vision of 6 obtained In 2 cases the rays produced no on the flora, recovery from operation was in both cases

Mr. Law had arrived at the following conclu (1) Ultra-violet light irradiation was succes nearly every case, in rendering the eye bacteriolo safe for operation (2) Pathogenic organisms more susceptible to the rays than were non-path ones (3) Even if the pathogenic micro orga were only temporarily attenuated operation eye could be safely undertaken (4) It advisable to combine with irradiation the appli of antiseptic lotions and silver nitrate. He ack ledged his indebtedness to his colleagues at Moo especially to Dr S H. Browning

The PRESIDENT congratulated Mr Law, and A C HUDSON referred to attempts made two ago to cleanse the conjunctival sac of contamin by means of the tungsten arc lamp, he the results obtained as distinctly encour The organism most to be feared was *Staphylo aureus.* It was important to make a second hird, bacteriological examination before operating, herwise the operator might be trapped by a urrence He did not think that the rays directly ed the organisms, but that they so stimulated the sues that they were able to cope phagocytically h the organisms

Mr G HANDELSMAN related a case of blepharo junctivitis, one of cataract with pneumococci both eyes, and one of tuberculous keratitis, whose junctivæ had responded well to ultra violet light had not had any success with the rays in cases chronic blepharitis of long standing

Mr D V GIRI (Eastbourne) agreed with Mr dson that the rays brought about leucocytosis and agocytosis, but did not directly kill the invading anisms

Mr LAW, in reply, said he did not think that the a-violet rays penetrated the skin of the lids did not see how ultra-violet light could affect atitis The danger area was the lower fornix, upper fornix was usually free from dangerous anisms

Mr J W. TUDOR THOMAS (Cardiff) read a paper a case of

Successful Corneal Graft

patient, whose graft still held good four months r the operation, was a resident of New Zealand, years of age Since the grafting, his vision had roved from inability to detect hand movements he distance of a few inches, to ability to find his about London by himself The patient now wn, said Mr Tudor Thomas, was the fifteenth of corneal graft in man When aged 17 years had had severe corneal ulceration, which left with central corneal opacities and very defective ht Seventeen years ago the eyes again became rated The right was the better eye of the two es projected on the screen clearly showed the te corneal opacities There was also a consider amount of haze in the surrounding cornea and nerative changes in the opaque area Projection good, and the vision was equal to finger-counting 5 inches The left eye could see only hand move nts There were visible a few small interstitial od vessels The anterior chamber appeared to be nal The patient's capacity for getting about had n limited to the sides of a square with which he familiar

was decided to graft the left eye with new corneal le, and this procedure was carried out at the ral London Ophthalmic Hospital four and a half ths ago, after waiting for an eye which had to be leated The graft was carefully cut with a shelving , and then immediately placed in a watch glass oil bath Two cross sutures were inserted ated saline and adrenaline were used to prevent sion of the iris The pupil was small and was in centre of the corneal opening The lens was He was an excellent patient, and the opera was carried out under cocaine anæsthesia after butal premedication

he eye progressed well without pain, and there no redness of the lids A small amount of oid discharge was present The stitches were oved on the eighth day Fourteen days after the ation the graft was clear with the exception of small white spot near its lower margin and there a minute oil globule near the outer border In shelving margin a few blood vessels took a lar course From the eighth to the twentieth the eyes were covered by a pad and bandage At weeks the white dot was still obvious The patient left the hospital in a little over a month On the thirty-fifth day the vision was 3/60, and the patient could negotiate curves in walking, and was able to read the larger headings of newspapers At the seventh week the vision was 4/60 For two months he had been going about London by himself The small corneal opacity, which was 1 mm long, was getting less The patient's blood pressure was somewhat high, and if, under the influence of excitement it became raised, the eye became red It always subsided after two days' rest Mr Tudor Thomas considered that it was quite fair to regard this as a successful corneal graft

Mr Tudor Thomas said he had now treated 16 cases in this way, by transplantation of cornea, one of them, however, only a week ago Of the remaining 15, 5 were not really suitable cases, and the results of these—not all failures—would be described They would prove of great interest Of the 10 suitable cases, all became united In one of them the graft was successful, but the pupil was small and did not correspond with the centre of the graft That case was not yet finished with The remainder were successes, the criterion of success being, in his view, distinct improvement in vision, and the graft retaining a considerable and lasting degree of transparency

The patient demonstrated to the meeting his ability to count fingers at a distance of four feet, to read large letters at the same distance, and to name accurately several playing-cards, he made no errors

A medical woman, a sister of the patient, spoke of the great improvement in her brother since the operation, not only in regard to vision, but also in his attitude towards life and his improved and happy facies He was able to read omnibus boards, and to negotiate successfully difficult street crossings. He was able to take a hand at cards, even in artificial light At the time of the great air race he said he had read all the large-type news in the papers, and some of the smaller type He was also able to write letters, preserving straight lines

The PRESIDENT expressed the congratulations of the section to Mr Tudor Thomas for this culmination to his patient experimentation and research, which had had such a brilliant issue in the human eye

A number of cases were shown and discussed

SECTION OF PSYCHIATRY

IN his presidential address to this section on Nov 13th, Dr DAVID FORSYTH spoke on

Psychology and Religion

He maintained that the new spirit of toleration, in which it was suggested that no inherent conflict existed between religion and science, was not supported by the findings of modern psychology, indeed, the latter emphasised the gulf between the two Psycho analysis traced many adult ideas of religious significance back to childhood Conscience for example, as a sense of right and wrong was believed by religion to have been implanted in all by God but no such innate sense had been found by psychology, which had proved the 'voice of conscience' to be the voice of the father as heard years ago in childhood Similarly the idea of an abstract deity presented great difficulty to a child, whose first ideas of God were naturally derived from its father The attributes commonly attached to God by adults were precisely those which had been experienced in a father The sense of sin and guilt also first showed itself in children at about the age of seven and always as a consequence of a conflict between the child's inclinations and its parents' wishes, especially with regard to bodily functions. Psychologically the healthy maturation of character required that guilty feelings should be outgrown

Belief in a soul and the hope of immortality had been taken by Christianity from primitive religions The belief in a soul was general among savages because of their experience of dreams in which dead members of the tribe participated. Adult savages and civilised children accepted their dreams as real, and were unable to discriminate between the imaginary and real worlds Was the religious mind similarly handicapped? Sexual feelings entered into some aspects of religion, and religious conversion represented a disorder of sexuality Commonest among adolescents, it was the new tide of sexual feeling being checked in its usual course and being deflected into religion Religious mysticism also included a large share of sexual feeling. The President suggested a psychological explanation of the two doctrines of the Trinity and Divine Mediation The former comprised the idea of a threefold deity, which was traced to the infantile notion of human kind as consisting of father, mother, and itself According to Divine Mediation requests to God were to be made only through Christ, and this could be brought into relation with the child's habit of making requests to the father—of whom they stood in awe—through the mother.

Sado-masochism was apparent in most religions In Islam sadism was stronger than in Christianity Islam expressed the male rather than the female attitude to life Masochistic enjoyment of suffering was seen in the habit of self-denial of various kinds which came to fullest expression in martyrdom. Mahomet's gospel of spread by the sword was essentially sadistic, whereas Christ's, as in the Sermon on the Mount, was essentially masochistic Christianity had always appealed to women, with their inborn masochism, rather than to men, and an implication of this impulse was evident in the history of Christianity: it had been the rulers, not the peoples, of Europe who had welcomed the Christian faith as a dogma suitable for their submissive subjects The sadistic few had always dominated the masochistic many

The most distinctive characteristic of religion was a belief in the supernatural; but science had failed to discover religion's spiritual world The difference was really due to two kinds of thinking—pleasure-thinking and reality-thinking Both were necessary to creative work, but whereas reality-thinking influenced the outer world, pleasure-thinking, since it was concerned with the imaginary world, did not. The danger of mistaking pleasure- for reality-thinking was seen in the delusions of the insane Similarly the infant failed to discriminate between the psychic and the real, and the child projected its fantasies into the outside world. Psychic truth was accepted as the standard by religion; objective truth by science. Religion claimed that its spiritual world was exempt from natural law, but psychology allocated it to the world of fantasy in which the writ of nature did not run The mysterious business of gods and spirits was an example of childish projection on a colossal scale Vitalism resembled to the religious attitude in that it recognised a superior guiding power in natural phenomena.

The conflict between religion and science represented a conflict between psychic and objective truth; but both, said Dr. Forsyth, were indispensable Could they be directed to a common end? The present need was to use the pleasure-thinking now applied to religion in the service of science; imaginative power must still be devoted creative arts, since science alone did not In the treatment of disease psychological had nothing in common with those of relig witness their respective attitudes towards Mental health required that sexuality—like should be acknowledged as a biological of all, and the sexual emancipation apparent in the younger generation was therefore to be without misgiving.

ROYAL ACADEMY OF MEDICINE I IRELAND

AT a meeting of the section of obstetri on Oct 12th, with Sir WILLIAM SMYLY in the Dr T. M HEALY gave a presidential addre the course of which he spoke about

Induction of Labour

The paper was based on an analysis of the intern and extern maternity cases occurring first five years of his mastership of the Hospital. His figures showed that operative ran a risk of sepsis five times greater than delivered spontaneously, yet the case from sepsis was only 1·5 per cent. higher in op deliveries He expressed himself in favour of tion of labour as a means of preventing d from disproportion. The fact that he was to show a decrease in his incidence of Cæsarean he attributed to the reluctance of the patie enter hospital sufficiently early in pregnancy

Sir WILLIAM SMYLY thought that one of the advantages of induction was that premature were relatively more likely to die within a few of birth

Dr A H DAVIDSON referred to the term mental Cæsarean section," which he thought apt At the Rotunda Hospital he had tried as possible to accomplish vaginal delivery, abdominal delivery. He felt that antenatal ca now gone almost too far, and statistics showed it had led to increased operative midwif thing to be avoided. He had no doubt the increase in induction of labour had definitely to an increase in the performance of Cæsarean Induction by puncture of the membranes wa a blessing and a curse It was a curse wh attempted to bring a borderline case into The great difficulty was that unless the head down on the lower uterine segment no meth induction would bring the woman into labour reasonable time and give the baby a chance of Cases in which the head did not fit well pelvis should, he thought, be left to deliver selves, and Cæsarean section should be done absolutely necessary. He felt that the prop of inducing labour had not yet been found out

Dr J. S. QUIN did not agree that induc labour had increased the frequency of Ca section, and thought that Dr Healy's showed that induction had not got as many advantages as Dr Davidson was inclined to be

Dr. NINIAN FALKINER said that although was becoming somewhat unpopular, it adopted if the results of other treatment be worse He believed that if induction out altogether in cases of disproportion there be fewer Cæsarean sections Where the high and labour was induced by bougies nach tube the results might be better than where ur was induced by the puncture of the membranes

r F W Doyle pointed out that in Dr Healy's s there was no morbidity in connexion with iction of labour during the first three years asked if he had employed any particular method ng this period Puncture of the membranes was ry old method which had been discarded, but now come into fashion again He was inclined to k that in first pregnancies it was better to let woman go on with labour and not resort to ction, for subjecting a primipara to Cæsarean on impaired her attainment of subsequent urs

r R M Corbet suggested that the more induction bour was done, the less could one be dogmatic it it He used induction a good deal, and had rarely been sorry that he had done so, on the r hand, he had come across many cases in which ery was very difficult and it would have been dvantage if induction had been done sooner

r Healy, in replying, said he thought that better ts could be obtained when it was possible to patients to have spontaneous deliveries The natal deaths were almost the same after inductions after spontaneous deliveries He could not see any means of avoiding Cæsarean section other than induction of labour, and he hoped that when more was known about the proper time for induction better results would be obtained He referred to a recent case of induction in which there was a medium degree of flattened pelvis The woman had had induction on three former occasions and had had one baby by spontaneous labour This baby which was born spontaneously on the district was nearly 2 lb heavier than any of the babies which had been induced in the hospital The difficulty was, he thought, to know the proper time to induce labour During the present year the attitude in the Coombe Hospital towards induction of labour had not changed, but the number of cases suitable for it was less than in the previous year There was no falling-off in the number of perforations, as a result either of the increased number of sections or increased number of inductions In New York, when statistics were compiled, induction was not regarded at all as an operation Lower segment sections were done on all patients who were in labour, and classical sections on the remainder Referring to the stillbirth rate with sections forceps, and inductions, he said that the rate was best with sections and worst with forceps, inductions came in between the two

REVIEWS AND NOTICES OF BOOKS

d Injuries

y L Bathe Rawling, M B, B Ch Cantab, R C S, Consulting Surgeon to St Bartholomew's ospital and to the West End Hospital for Nervous iseases London Humphrey Milford, Oxford niversity Press 1934 Pp 86 7s 6d

e Humphrey Milford is to be congratulated on ading Mr Bathe Rawling to write this mono h on head injuries Mr Rawling made his mark urgery some thirty years ago by his Hunterian res on head injuries, and ever since then he has sistently maintained his interest in cranial surgery can have had a wider experience of head injuries he, not only in civil life but also during the war h he made important observations on the late ts of head injury in soldiers This monograph, en shortly after the author retired from the e staff of St Bartholomew's Hospital is a ise and at the same time a very readable book pens with short accounts of concussion and ression Mr Rawling believes that concussion e result of acute inhibition of the vasomotor e and acute anæmia of the brain and that it is necessarily associated with any lesion of the n He gives a useful summary of the methods linical investigation of a case of head injury, is strongly in favour of diagnostic lumbar punc He is not convinced of the value of spinal ometry, for he has found that the data obtained be very confusing Emphasis is laid on the rtance of the temperature in prognosis and erature charts of cases of varying severity are n

om his war experience Mr Rawling reached conclusion that the ophthalmoscope is of value in cases of acute head injury In treat he cautions surgeons against the indiscriminate f intravenous hypertonic salt Full consideration en to the lines of fracture in various parts of the and to the symptoms produced by them and the iptions of the methods of elevating both com d and simple depressed fractures of the vault clear and precise One chapter is devoted to subdural and extradural hæmorrhage and here it may be questioned whether the author is right in advising drainage of the subdural space after removal of a subdural hæmatoma After a chapter on the early and late complications of head injury the book closes with notes on the technique of operations and on cranio-cerebral topography The style of the book is admirable, clear, and the format and production leave nothing to be desired

A Text-book of Bacteriology

With a section on Pathogenic Protozoa The Application of Bacteriology and Immunology to the Etiology, Diagnosis, Specific Therapy and Prevention of Infectious Disease For Students and Practitioners of Medicine and Public Health Seventh edition By Hans Zinsser, M D, Professor of Bacteriology and Immunology, Harvard University Medical School, and Stanhope Bayne Jones, M D, Professor of Bacteriology, Yale University Medical School Rewritten, revised, and reset New York and London D Appleton Century Company 1934 Pp 1226 With 174 illustrations in the text 30s

The well known work of Hiss and Zinsser has for many years been one of the leading American text-books of bacteriology, and it has also enjoyed considerable popularity in this country even among undergraduate students The seventh edition which has now been published under the authorship of Professors Zinsser and Bayne Jones, is likely to continue in favour, for along its own lines there is no better text-book on bacteriology in existence The new edition has been improved in every way, and all the more important advances in bacteriology almost up to the present moment are incorporated The book differs from many otherwise good books on bacteriology in being eminently readable and any serious student who wishes to gain an idea of the place which is being taken by bacteriology and immunology in modern medicine can do no better than read it The sections on immunity are excellent and the chapters on *Rickettsia* and virus diseases particularly good, as one might expect from the authorship The protozoa and the pathogenic fungi are fairly fully considered. There is ample evidence that even the most recent British and continental work has been followed and rightly appreciated, and the authors make handsome reference to such important recent English text-books as Topley and Wilson's "Principles" and the Medical Research Council's "System." That the book is in full accord with the best present teaching in this country and at the same time presents the teaching of the two most famous of American universities makes it particularly interesting and stimulating to an English student. There is in the book, by the way, a recurrence of the common error of spelling Hofmann of diphtheroid fame with a double "f." Confusion seems to have commenced regarding the name of this bacteriological celebrity when he published his first communication on the pseudo-diphtheria bacillus in the "Centralblatt für Bakteriologie" of 1887 under the name of G. v. Hofmann, Wellenhof, and his fuller account in the "Wiener Medizinische Wochenschrift" of 1888 under the name of Dr. Georg v. Hofmann-Wellenhof. On both these occasions, however, the spelling of Hofmann was uniform.

A Synopsis of Regional Anatomy

Third edition. By T. B JOHNSTON, M.B, Ch B, Professor of Anatomy, University of London, Guy's Hospital Medical School. London · J. and A Churchill Ltd 1934 Pp. 460 12*s* 6*d*

THIS well-known synopsis has been given a section on osteology, and other small additions have been made to its text The section dealing with the central nervous system has been somewhat altered, and the size of the page has been increased The result has been to make better an already excellent manual. A feature is the use of the new English terminology, in which garb this is, we think, the second book to make its appearance It reads well, and will doubtless be generally approved, here and there are terms which seem no more desirable than those hitherto in use, but mostly the nomenclature appears very good Altogether this is a satisfactory book

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Laboratory Manual of Biological Chemistry

Fifth edition By OTTO FOLIN, Hamilton Kuhn Professor of Biological Chemistry in Harvard Medical School London · D Appleton-Century Company, Inc. Pp 368 12*s* 6*d*.

Prof Folin is well known as the originator of the clinical application of blood chemistry. It is due to his years of patient work that the physician and surgeon to-day are able to obtain so much help from the laboratory The fifth edition of his valuable laboratory manual is like its predecessors, interleaved Many of the errors in earlier editions have been removed and the work can be confidently recommended as a reliable guide The course described as being generally given to medical students is much more elaborate than that provided in any of the medical schools in this country.

REPORTS AND ANALYSE

EGG TONIQUE

(HAWORTH AND AIREY, LTD, ELTON FOLD WINE
BURY, LANCS)

THIS is a thick, rather viscous yellow fluid, ing an agreeable and delicate flavour sugges a mixture of egg and sherry It claims to be in a readily assimilable form, and an ideal to convalescents, and in cases of general de When analysed the following results were obtain

Alcohol .	14 8	per cent (by weig
Sugar .	10 20	,, ,,
Fat .	2 83	,, ,,
Protein . .	1 72	,, ,,
Mineral matter .	0 33	,, ,,

Preservatives were tested for with negative re

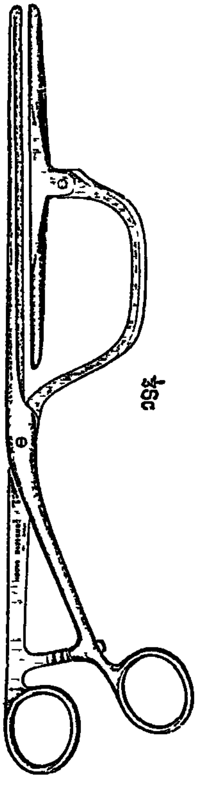
These figures are consistent with a mixt about 13 per cent. of eggs and 10 per cent of the balance being wine

The Egg Tonique, as will be seen from this an is a nutritious preparation composed of wi and sugar. Being in the condition of a stab homogeneous emulsion this useful tonic is alw hand, and the trouble and time of mix ingredients is in consequence saved

NEW INVENTIONS

A NEW CLAMP FOR STOMACH OR

AFTER more than 12 years of the practice surgery in South India, I designed the st of which this is an illustration. Clamps of the or



shape, whether with th thin blades, have a tende damage the stomach or int in some places, while ciently gripping in others, Wells overcame this making a hinge in the of one of the blades, the itself being attached to the by springs. But the Wells is difficult to clean, and be made, in part at lea ordinary steel, the plat which wears away. This simpler clamp on the same ciple, but embodying the in the arm between the and the pivoted blade I now tested them during 1934 in over 200 tions on the stomach, as w many on the intestines bear witness to the ex of the clamps both in performance and in their workmanship The clamp the gut firmly, yet gent with uniform pressure be made of stainles throughout and is easy to The pivoted blade shou enclosed in rubber tubi if that is done this clamp the minimum of damage mucosa of stomach or in It is "easier to be gentle" with this clamp th Wells', Kocher's, Beck's, or any other type of

(*Continued at foot of previous column*)

(*Continued from next column*)

that I have seen. The bent handles enable two clamps to be used side by side without undue pulling of the gut, besides allowing them to be removed independently with ease

Messrs Down Bros., St Thomas's-street, London, S.E., are the makers of the clamp.

T. H. SOMERVELL, M.B, B.Chir Camb., F.R C S. Eng.

THE LANCET

ONDON SATURDAY, NOVEMBER 17, 1934

MATERNAL MORTALITY

TEN years ago a group of London surgeons on iday, discussing the mortality of childbirth, e of opinion that a risk of four or five per 1000 one with which any surgeon would be satisfied ch has happened since then to modify this ling of complacency While it is true that 3000 rperal deaths do not make a large show among 240,000 deaths from all causes in the year, is the peculiar importance of the maternal ction and the early age at which they occur t gives them special significance, of the women die between the ages of 30 and 35 at least one eight dies as a result of childbirth *But it is* so much the number of deaths as the evidence their preventability which has so completely red *informed* opinion during this period It ow six years since Mr NEVILLE CHAMBERLAIN, n Minister of Health, appointed a departmental mittee to advise upon the application to ternal mortality and morbidity of the medical l surgical knowledge at present available Two rs after their appointment this committee le an interim report for the express purpose giving their opinion that at least half the 5800 ths in childbirth reported to them could have n prevented had due forethought been exercised the expectant mother and her attendant, a sonable degree of skill brought to bear upon management of the case, and adequate facilities treatment provided and utilised And when the mittee's final report appeared two years later opinion was supported by a categoric statement the primary avoidable factor in 46 per cent these cases Nor even then was this figure arded as unduly high Just before the appear- ce of the report Prof MUNRO KERR, in a series maternal deaths in Glasgow, had found 75 per t preventable and a year earlier Sir GEORGE WMAN had told the College of Nursing that if ctive medical and midwife supervision of ernity cases began early enough and was perly maintained up to and after childbirth, mately the maternal mortality rate might well reduced by as much as three quarters The morandum on a national maternity service for gland and Wales issued by the British Medical ociation agreed in all essential particulars with recommendations of the departmental com- ttee, and it was about this time that another ister of Health, Mr ARTHUR GREENWOOD, that although he had not yet met anybody knew exactly what a national maternity vice meant, yet he had an objective and that ective was to fulfil the principles laid down in the report of the departmental committee A grant of £1,500,000 from the Exchequer was to assist local authorities in carrying out such a scheme, but when in 1931 the May report insisted on economy and the scheme was scrapped as unduly ambitious, there were many beside Mr GREENWOOD whose objective remained the same

No one in his senses has the right to assume that administrative action alone is going to make childbirth a safe occupation The roots of the evil lie far deeper than that Urbanisation and industrialisation have exerted a profound and increasing influence on the conditions of childbearing and it is not the neediest stratum of society which is suffering the most or exclusively A brave man might even now *hazard* a word of thankfulness that the mortality is not higher than it is No one recognises this more fully than the elder statesman whose words last week at the dinner of the British College of Obstetricians and Gynæcologists have made so profound an impression on the public mind Mr BALDWIN, after describing as "a very terrible indictment" the statement that half the maternal deaths in Britain are preventable, impressed two things on the College as his own message for the future: (1) to maintain standards which he agreed were already high, and (2) to initiate research to find out if there were not some factor, which had hitherto eluded their vigilance, to account for the maintenance of so high a mortality Reading between the lines of the departmental committee's report it is evident that the lacunæ are not all of an administrative nature In a presidential address to Irish obstetricians, mentioned on another page, Dr T M HEALY alluded to the increasing incidence of operative interference during pregnancy and labour, revealed in publications from almost all maternity centres If, he said, we justify our operations by pleading that modern civilisation has produced women who cannot deliver their babies, it seems arrogant to assert that the same generation has begotten a race of obstetricians to make good the failures In response to inquiries from the Minister of Health medical officers of health throughout this country have already indicated their view that antenatal care was at fault in 406 recent fatal cases, facilities insufficient in 456, coöperation on the part of the patient lacking in 208 Although during the last three years the proportion of women attending antenatal clinics has risen from 27 to 42 per cent of notified births, these reports made it clear that the essentials in the conduct of a clinic are by no means easy to secure Admittedly many local authorities are doing splendid work and continuous pressure is being put on others to follow them But, in Sir GEORGE NEWMAN's words, this enterprise must inevitably and inherently be complex and protracted, we must not get impatient for arrival on a long distance journey

In one direction however the rousing of public indignation may be justified In accounting for the poor results obtained in midwifery Sir GEORGE gave second place to the nutrition of the mother during pregnancy and particularly her [illegible] For several years past a representative body known as the Maternal Mortality Committee has met annually in London to consider the problems of mortality and morbidity in childbirth and the best ways of meeting them Those meetings have hitherto been informative, earnest, and orderly; but, as the representative of the *Manchester Guardian* pointed out acutely in that journal, at last week's meeting "something seemed to have snapped." The chairman at times had to contend with cries of protest from different quarters of the hall, speakers were shouted at, people kept jumping up to ask questions, militancy was the order of the day, and, perhaps most significant of all, the most decorous women afterwards expressed their delight with "the best meeting they had ever had." Perhaps Lady **BARRETT**'s remarks gave the most logical clue to the undoubted bitterness Her experience, she said, had convinced her that when a woman dies in childbirth, with no outstanding cause being present, there is invariably a condition of extreme malnutrition, and Mrs. **ELEANOR BARTON** spoke of the futility of recommending pregnant women to accustom themselves to a diet including ample milk, cheese, butter, eggs, fish, liver, fruit, and fresh vegetables when these were outside the possible range of women of the poorer classes. This meeting of women was moved by the iniquity of a state of malnutrition in young married women of such a degree that the stress of childbearing, apart from any of its major complications, was sufficient to carry them off.

CHOLECYSTECTOMY IN THE ABSENCE OF STONE

UNLESS there are complications, or a grossly infected gall-bladder, cholecystectomy is no longer a very formidable operation. Hence interest in it, as Mr. W. **ARTHUR MACKEY** points out,[1] has shifted from mortality figures to end-results. There is a suspicion that the reasons for which gall-bladders are removed are often inadequate, and that the pathological changes demonstrable in the excised organ sometimes bear no relation to the symptoms that were bothering the patient. Cholecystectomy in the presence of calculi and done to relieve biliary colic is a very satisfactory form of treatment, but when its object is to remove the symptoms of chronic cholecystitis—which are usually much less definite—its results are not nearly so easily predictable. In his paper in the *British Journal of Surgery* **MACKEY** analyses the after-history of 149 patients on whom cholecystectomy was performed for symptoms attributed to lesions of the gall-bladder, but in whom operation showed no calculi The pre-operative history and the pathological specimens were available in all the cases, and the investigation shows that cholecystectomy wrought a cure in 44 and an improvement in 44 others. It appears that cholecystography is of value in indicating the probable success of operation only where it reveals deformity of the gall-bladder shadow. In **MACKEY**'s series deformity usually meant adhesions and the symptoms subsided when the organ was out of the Again, where the patient had had attacks of the results were, on the whole, good, 76 per benefited by cholecystectomy. On the other cases regarded as examples of gall-bladder dysp (flatulent dyspepsia, with food-selection and pation) were disappointing and **MACKEY** do whether it is justifiable to refer such to the gall-bladder. When it has no gross le such as catarrhal or fibrous inflammation, it see be a dubious source of symptoms, and its gave complete relief in only 11 out of 57 case

One of the minor lesions to which signif has lately been attached is cholesteros "strawberry" gall-bladder. In this c mucosa shows a deposit of cholesterol, and it been argued that such a finding in a gall b removed at operation fully justifies its exc since it means that its powers of absorption diminished This conclusion is called in ques by Mr. **DAVID PATEY** in the same journal.[2] H produced cholesterosis in rabbits—by giving ch terol with their food and simultaneously pro chronic inflammatory changes in the gall b he found that the cholesterol content of the bl was always higher than the corresponding for the bile Tying the cystic duct did not p cholesterol from being deposited in the bladder, and, finally, the site of the seemed to be the determining factor in the dep tion, for when the inflammation was confined the serosa the cholesterol was found only in layer. It was found, moreover, in adhesions the gall-bladder and in the abdominal All these observations point to the blood as source of the cholesterol, and argue against theory that cholesterosis is due to a break in the mechanism of absorption The prac application of these conclusions is that the pre of "strawberry" changes in the gall-bladder not, of itself, justify cholecystectomy, **MACKEY**'s figures show that in fact its re such cases are poor. At the same time Mr. Ha **HARDING**[3] has tried to produce in animals condition similar to mucocele of the gall b in man Mucocele usually develops when cystic duct is ligatured and the gall-bladd emptied of its contents, but **HARDING** conc from his observations that a mild irritation as very slight inflammation, is an essential par the process Mucocele found at operation th evidence of mild infection with definite obstruc and even in the absence of stone in the cystic d cholecystectomy seems to be desirable, in view of possible formation of a gall-bladder empyema

MACKEY really sums up the situation in sentence "It is clear," he says, "that, just as ca with well-marked symptoms are likely to do b after cholecystectomy than those in whom symptoms are vague, so removal of a defin pathological gall-bladder is generally produc of a more gratifying clinical result than is exc of an organ in which the microscopical appear are equivocal"

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[1] Brit Jour Surg, October, 1934, p 274

[2] Ibid, p 378

[3] Ibid, p 355

SMOKE ABATEMENT. THE WILL AND THE DEED

HE atmosphere in our large cities is said to be le better now than it was 25 years ago, but t is not for want of knowledge of the nature origin of the pollution, for it is nearly as long that since the Coal Smoke Abatement Society, nded by Dr H A des Vœux and others, initiated measurement of soot and dust in the air At the deposits collected were analysed in The ncet laboratory, and in 1916 appeared as a cial supplement to The Lancet, the first report a committee over which Sir Napier Shaw sided, giving in avoirdupois the amount of soot, and mineral matter discharged from chimneys factory shafts to pollute the air in various ts of the country The sooty census becoming re and more complete was assigned to the eorological Office, and so to the Air Ministry is terribly disappointing that the will to act lagged so far behind the knowledge of evil, t in spite of the electrification of railways, the roved mechanics of commercial plant, and the stitution of gas and electric fires and stoves coal grates and ranges, the smoke pall is as l as ever over many of our cities Nor does the oke respect boundaries, for, as the treasurer the National Smoke Abatement Society has ntly pointed out, there is a fringe of soot on uston Water, and the fleece of sheep on Derby- o hills is blackened by smoke This society just published a shilling treatise on the Law ting to Smoke and Noxious Fumes by the Randolph Glen, a well known authority on lic health matters It clearly explains the vers possessed by those whose duty it is to minister the statutes for smoke prevention, and the rights of private persons under the common to be protected from atmospheric pollution ne such guide was needed amid the tangle of arate provisions for dwelling-houses, business mises, railways, and steamships—not to mention special code of law which applies to London

What can the private person do about the evils air pollution? He is aware that an ordinary l perhaps inevitable vapour fog is a menace to lth and comfort when it is thickly charged h the "soot, ash, grit, and gritty particles" ich the law now includes in the definition of oke under the Act of 1926 He is probably are that faulty methods of consuming coal, or use of particular types of coal, result in the ssion of sulphurous acids into the atmosphere the detriment of ancient buildings and other ds of property He may even wonder why a ern like the Battersea power station, beautiful it may be when flood lit by night has been ced in the middle of London But unless a rticular chimney makes itself a nuisance to his ticular property, he is unlikely to be moved any action If he expects the local authority deal with excessive smoke as with other nuisances, may find that Parliament has given powers of ich little use has been made The Public Health (Smoke Abatement) Act of 1926, intended as a big step forward from the limited restrictions on black smoke in the Act of 1875, did increase penalties and make proceedings easier But its new provisions as to by-laws have proved a disappointment Under Section 2 local authorities might (and, if required by the Minister of Health, must) make by laws regulating the emission of smoke of such odour, density, or content as the by-laws might prescribe The by-laws might prescribe a period of emission which would prima facie make such smoke a punishable nuisance This was a valuable effort to fix standards, but no local authority has yet had such by laws confirmed nor has the Minister issued model by laws, though the Smoke Abatement Society has drafted sets for his approval

Two important facts doubtless dominate the situation First this is no time to hamper commerce by imposing fresh restrictions and expenditure It was shown in the Manchester case in 1930 that during the strike of 1925 the corporation imported American coal which was practically sulphur-free, ordinarily the corporation used South Lancashire soft coal which contained over 2 per cent of sulphur and was much cheaper "The more nearly the use of coal containing sulphur is shown to be unavoidable," said Lord Sumner, "the more imperatively necessary is the use of some means of eliminating or neutralising the sulphur, and the harder it is to show that no remedy can be found" The Manchester corporation lost its case because its officials had not directed their minds to the prevention of probable nuisance, "they were under the impression that, so long as their plant was efficiently and successfully conducted, the neighbours must endure their consequent injuries with such stoicism as they could muster" The corporation presumably had its ratepayers' pockets in mind just as the Government hesitates to inflict fresh cost on the owners of industrial chimneys The second consideration is that the domestic coal grate is the worst offender, yet almost all the statutes make an exception for the private dwelling house Parliament is not prepared to interfere with the Englishman's traditional methods of keeping the home fires burning Last year a question was asked in the House of Commons about the erection of municipal houses either without flues or with a type of flue which precluded the use of coal or other solid fuel The Minister replied that he was not ready to approve unless a coal fire could be used in at least one room of such houses On the whole, therefore, the prospects of smoke abatement suggest a resigned pessimism The householder has still to make a greater contribution to the cause of clean air, and the Minister has still to devise those non-existent by laws which somehow might manage to help the atmosphere without hindering trade Local authorities have statutory powers of research under Section 10 of the Act of 1926 which might [illegible] these powers are subject to rules made by [illegible] and no rules have yet been made

THE CHICK-MARTIN TEST FOR DISINFECTANTS

THIS journal has a hereditary interest in the testing of disinfectants, since it was responsible in 1909 for a thorough investigation which at least revealed the difficulties and pitfalls of the subject to a wider public. The type of test then under consideration was that in which "naked" bacteria are exposed to the action of a disinfectant, and although such a test may have important uses, it admittedly fails to indicate how far the action of a disinfectant is impeded by the presence of other material. It has consequently been urged that such material as fæces, urine, or milk should be incorporated in the test mixture, while advocates of a simpler form of test contend that the composition of such materials is so inconstant that dependable results cannot be secured From a controversy which raged over this question some time before the war two recognised tests emerged, the Admiralty test, in which gelatin and starch are employed, and the Chick-Martin test, in which the addition is 6 per cent of dried human fæces. This test is adopted officially by the Board of Trade, the Ministry of Agriculture, and the Office of Works, and the permitted instructions as to dilution for certain purposes depend on its results. In spite of its important status, the Chick-Martin test has been little used except by those compelled to use it, partly because it is both laborious and unpleasant, and partly because it is freely accused of giving irregular results It is no secret that identical samples of the same disinfectant submitted to a Government department on different occasions have been awarded quite different coefficients. In spite of this, the technique of the test has remained entirely unchanged for 25 years, and no attempt has apparently been made to ascertain possible sources of error or to improve it.

A recent investigation by Dr. L P. GARROD[1] offers some explanation of the inconstant r which this test is alleged to give This lies chiefly in the physical properties of th pension of dried fæces; the degree of sub of the large particles formed by drying and varies with the amount of shaking to which suspension is submitted, and as would be exp the finer the subdivision, the greater is the of interference with disinfectant action T of shaking the tube also affects the result way: in critical disinfectant dilutions th surviving bacteria are all contained in the deposit of fæcal particles which rapidly when the tube is allowed to stand, so that wh a positive culture is obtained from the may depend on whether the inoculum inc some of this deposit. In the light of these the Chick-Martin test could be modified to greater dependability, but Dr GARROD that fæces in any form be discarded altogether their place be taken by a suspension of yeast, w resembles fæces in that the latter is, after largely a suspension of bacteria, and has further advantages of much more constant position and unalterable and almost particle size Preliminary tests have shown th yeast suspension does interfere with disinfe action to much the same extent, weight for we as fæces. The use of fæces is so obviously priate and countenanced by so many year practice that it enjoys an almost affection, and it will be interesting to see ho entirely new suggestion is received. Meanwh is to be hoped that a more general interest may taken in this question, and perhaps some introduced into the chaos of surgical disinfe testing, a sphere in which the position is worse than that which we have been consid that there are, in fact, no methods at all which claim authority or official recognition.

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[1] Jour Hyg, 1934, xxxiv 322

ANNOTATIONS

THE FAME OF PADUA

ON Wednesday afternoon, Nov. 7th, Prof Arturo Castiglioni of Trieste delivered before the historical section of the Royal Society of Medicine an address on the famous school of anatomy in Padua and its great figure, Morgagni Speaking in fluent English the lecturer showed himself to be intimately informed on the early history and rapid progress of one of the greatest medieval schools of medicine in Europe, a school to which we in this country are linked by the fact that, among other of our famous countrymen who received instruction at Padua, was William Harvey. The development of the University of Padua on coming under Venetian supremacy made an admirable theme, and it is interesting to note that Harvey was in direct line with Vesalius Fallopius and Fabricius Malpighi and Valsalva were also predecessors of Morgagni, who arrived at Padua in 1712 to spend the last sixty years of his long life as professor of medicine there This was a little over one hundred years after the graduation at Padua of Harvey Prof Castiglioni showed in his address the skill that might have been expected from one of his literary reputatio marshalling the facts, and the afternoon session section was a great success

On the following evening Prof Castiglioni wa guest of honour at the first of the receptions to be at the house of the Society under the pre of Dr. Robert Hutchison The fact that the fu unfortunately clashed with several others that eve did not prevent a full house, though many fa faces were missing. The president received guests in the library, where they had an opport of inspecting a display of ancient books and m scripts appropriate to the dissertation on the A University of Padua and its English Scholars del in the course of the evening by Prof Castig Sir StClair Thomson, who was partly respons arranging his visit, welcomed him with equal gra English and in Italian Vivid lantern slide contemporary pictures, buildings, and of great who had studied medicine in Padua were effectively to illustrate the lecture The pre in voicing the general appreciation, spoke of changing fashions in post-graduate medical ce

European capitals had been popular in turn, own university of Edinburgh had had its vogue o America led the field, and the reports of the nedical work being done in Prof Castiglioni's own l made it seem likely that Italy would again me the Mecca of doctors from other lands

BLOOD-STAINED TEARS

n the heading "Larmes de Sang" an unusual is recorded by C Déjean[1] A girl, 11 years old, subject to spontaneous hæmorrhage from the nctiva of the left eye, at first slight and occasional, n the course of a year or so becoming more severe frequent There was also bleeding from the nose n the subcutaneous tissue, causing anæmia and of weight During a short stay in hospital these orrhagic crises were repeated several times a day, Déjean himself witnessed one of them It ened at 10 o'clock in the morning while the girl on her feet, the left eye suddenly became dshot and blood oozed from the conjunctival ls collecting at the inner canthus and overflowing o the cheek After two or three minutes it ed There was no obvious abrasion of the unctiva, nor was the bleeding localised to any one It could not be traced to the lacrymal gland n the date of the first menstruation these orrhages definitely ceased A somewhat similar reported by Gabriélidès[2] in 1923 could also be ibuted (with suitable reserve) to vicarious menstrua-, and one described by Richardson Cross in 1891 woman of 21 may have been of a kindred nature[3] nother case of Gabriélidès, however, the patient a widow of 36 and there was no obvious relation veen her attacks and her catamenia There is a case on record of similar symptoms in a young , a non commissioned officer of hussars who had n from his horse and sustained a cerebral injury bourg-Blanc[4])

THE TRAFFIC IN DANGEROUS DRUGS

T the fifteenth meeting of the Assembly in tember the efforts of the League of Nations ontrol the traffic in opium and other dangerous gs came under review It was observed that flow of drugs from licensed factories into under nd illicit channels has diminished, but clandestine ories are now the principal source of this traffic ch threatens to become greater than ever The ation in Bulgaria has not been cleared up and the ition in China both north and south of the Great ll, is very unsatisfactory The imports of acetic ydride (for the production of heroin from rphine) into Shanghai seem to imply the manu ure of some 18 tons of heroin or twelve times the timate requirements of the world It is interesting earn the extent to which the several conventions e received ratifications or accessions The Hague vention of 1912 has received 58, the Geneva vention of 1925 51, and the Limitation Convention 1931 48 Preparation seems to be proceeding ugh tardily for the promised conference on itation of cultivation of the opium poppy and the a shrub

here is not a little confusion as regards the pective spheres of competence of the three organisa s set up to deal with opium and dangerous drugs These are, first, the "Advisory Committee" of the League of Nations appointed by resolution at the first Assembly, secondly, the "Permanent Central Opium Board" arising out of the Geneva Opium Convention of 1924; and thirdly, the supervisory body constituted under the Limitation Convention of 1931 During the seventeenth session of the advisory committee a discussion arose on a comparative statement by the secretariat of the League on the respective references to the three bodies It appeared that there had been overlapping of their functions, resulting in divergent communications being made to certain governments on the same question Several speakers emphasised the need of more strict definitions of the duties of the three bodies and the committee adjourned the discussion for further consideration by representatives of the three organisations, who were appointed at the eighteenth session of the committee in June

RADIONECROSIS

THE dangers of X ray dermatitis, which follows prolonged exposure, and may be accompanied or succeeded by necrosis or malignant changes have long been known The necrosis which may follow treatment by radium, particularly by the interstitial method, is equally serious as a cause of long and painful illness, which may eventuate in the death of a patient apparently free from malignant disease At the fifth Australian Cancer Conference held at Canberra in April last, this necrosis was one of the principal subjects for discussion and the speakers, who included Dr R Kaye Scott, Dr R Douglas Wright, Dr H A McCoy, and Dr J H Molesworth, all agreed[1] that this late necrosis, which may appear many months or even years after irradiation, is one of the most difficult problems of radiotherapy

Late radium necrosis is frequently seen in the mouth, and is most likely to occur if two treatments have been given or if needles have been inserted close to bone As soon as the surface epithelium breaks down, infection is inevitable, or infection through an abrasion or following the extraction of a tooth may precipitate a very acute necrosis with sequestration of bone, sloughing of the soft parts, and hæmorrhage In the skin there may be extensive ulceration, and again infection complicates matters and chronic multilocular pustules appear which show little or no tendency to heal and are surrounded by a wide area of induration In the vagina there may be loss of tissue and induration is also a marked feature, so much so that the necrosis is extremely difficult to distinguish from recurrence Ulceration appears in rectum or bladder exactly simulating malignant ulceration and unless the condition is recognised and carefully treated fistulæ may form and colostomy or suprapubic cystostomy may be required Dr Wright has made a histological study of a number of cases, and although he has found obliterative endarteritis in some situations, this was not present in two cases of late necrosis which he studied with great care and which showed interesting changes in the elastic and fibrous tissue of the corium, he concludes therefore that it is not the essential factor Certain conditions of which syphilis and tuberculosis are the most common predispose to necrosis, and cases complicated by such infections should be treated with special precautions

Once necrosis has appeared, surgical treatment if possible at all must be radical and consists of wide excision either with the knife or the diathermy needle followed by grafting, but, in many cases, particularly if bone is involved, only palliative treatment may be possible. In this case it is better to leave the bone to separate, because, if part is removed, the necrotic process will spread rapidly through bone which, before the interference, had appeared to be quite healthy.

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[1] Arch Soc des sci méd et biol de Montpellier 1931 , 468

[2] Arch d'oculistique September 1923 p [illegible]

[3] Trans Ophthalmol Soc 1891, 11 [illegible]

[4] Arch d'ophtalmol October 1931

[1] The Medical Journal of Australia 1931 [illegible]

Treatment is so difficult that it is better to direct attention to prevention, although in certain cases where the disease has already attacked bone some necrosis is inevitable For interstitial treatment, the needles must be adequately filtered with not less than 0 5 mm. of platinum, and the intensity should not be more than 1 5 millicuries destroyed per centimetre of active length, with the needles distributed approximately 1 5 cm apart. The optimum time for a carefully planned interstitial irradiation is seven days, and ten days should be regarded as an absolute maximum If surface irradiation is used, the distribution of the sources and the dosage must also be accurately planned, and if irradiation follows surgical interference, especially diathermy, it must be remembered that the risk of necrosis is considerably increased.

A DUBLIN HOSPITAL BICENTENARY

In the present year Mercer's Hospital, Dublin, celebrates the two hundredth anniversary of its foundation The governors have decided to take notice of the occasion by certain festivities at the beginning of next month There will be a reception at the hospital on Dec 4th, and on Dec 6th a dinner of governors, past and present members of the medical staff, and past and present students will be held at the Royal Hibernian Hotel On Dec 7th there will be a dance for the nurses and students The hospital owes its origin to Mary Mercer, daughter of George Mercer, M D., Fellow and Vice-Provost of Trinity College, Dublin, who in 1734 made over a large stone house in the city of Dublin for the accommodation and use of such poor persons as laboured under "diseases of dangerous and hazardous cure, such as lunacy, leprosy, or falling sickness" It is interesting that the site of Mary Mercer's house had been centuries earlier the site of a hospital for lepers, and subsequently of St. Stephen's Church, from which the neighbouring square, St. Stephen's Green, takes its name. The churchyard now constitutes the yard and garden of the hospital The hospital has an interesting association with a famous event in the history of music. It was on behalf of the institution, then in its infancy, that in 1742 Handel's "Messiah" was first publicly performed, the composer himself conducting the performance in the old Fishamble-street Theatre, Dublin More than a hundred years later, at the Handel centenary celebrations in 1859, the famous Jenny Lind sang at an oratorio performed in Dublin in aid of the hospital The first addition to Mary Mercer's stone house was made four years after the hospital was founded, and the number of beds was thereby increased from 10 to 40, while at the same time "conveniences were added for bathing and sweating" There have been many additions to the hospital since 1738, but the stone house is still the kernel of the building which now has accommodation for 110 patients Much of the original woodwork of the old house still persists in good order, the old doors showing small wickets in the lower panels to permit of the passage of the cats of which tradition says that Mary Mercer was fond Though the hospital has passed through various vicissitudes in its long history it has served the poor of Dublin well, and has added its share to medical and surgical knowledge. The names of Tuf
Butcher have their place in the history of
Despite its small size the governors in recent
have spared no effort to keep the hospital thor
efficient, and its reputation never stood high
at present. It may well be that the two hun
anniversary may almost synchronise with the
ing of the individuality of Mercer's Hospital
greater institution more in touch with
conditions, for plans are afoot for the amalga
of the hospital with two others of similar sco
Patrick Dun's and the Royal City of Dublin

NERVOUS DISTURBANCE IN POLYGLOT CHILDREN

At a congress held last month in Budapest b
Société Internationale de Logopédie et de Pho
Mme Borel-Maisonny (Paris) described three
of retarded speech which seemed to have thei
in faulty education. In one of them she
the disability to a too early use of several
Dr. Pichon expressed the opinion that "
gualism" carried a risk of psychological di
and impaired the faculty for verbal expression.
held that until a child had reached the age of
should be acquainted with one language only,
that, when once the habit of idiomatic
in the mother tongue had been established, it
safe to encourage polyglot accomplishments.
de Parrel said that speaking from the phonetic
of view he favoured early initiation of the
child into the articulation of some foreign
and Prof F. R. Nager said he did not believe
in countries where it was usual children took
harm from being bilingual from infancy.

HOOKWORM ANÆMIA

There has been no doubt, since Bailey A
discovery in 1899, of the ability of the
worm to produce disastrous anæmia Op
still differ however on whether the
anæmia associated with hookworm infestation
primarily to nutritional defects, as postulated
Rhoads and Castle,[1] or to hæmorrhage, as held
Wells.[2] Dr. W. O Cruz[3] has now published
elaborate study which favours the former hypoth
He concludes that the essential cause of the
is a deficiency of iron which is due partly to a
diet and partly to some unexplained action of
parasite inhibiting the assimilation of iron
says that in certain districts where a mixed
rich in meat is taken infestation is not ne
associated with anæmia or illness in any form
moreover, individuals in any region may be
with heavy infestation but no anæmia By
large doses of iron he has himself found it pos
to maintain a satisfactory hæmoglobin level
patients who were heavily infested and orig
anæmic, and recovery from the anæmia is not
ciated with loss of the worms He describ
detailed study of the marrow in 24 fatal unco
cated cases of hookworm anæmia, but unfortun
only marrow from the femur and sternum
examined—sites where active marrow is

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[1] Rhoads, C P., and Castle, W. B : Jour. Clin Inve
xi, 809, see The Lancet, 1932, ii., 588

[2] Wells, H S Jour Parasitol, 1931, xvii, 167, se
Lancet, 1932, i, 893

[3] Cruz, W. O. Memorias do Instituto Oswaldo Cru
xxviii, 287, 391 and 423

[4] See Hookworm Anæmia, Acute and Chronic, The La
1934, i, 759.

d—so it is not possible to estimate from his data degree of hæmopoietic activity throughout the eton The picture presented was, however, sistent, and similar to that described in idiopathic ochromic anæmia There was definite normo-tic hyperplasia with an excess of eosinophil locytes in some instances In the patients under *there were signs of myeloid activity in the* en, but none was found in the liver Cruz holds these observations help to substantiate the othesis that the anæmia is due to a deficiency of rather than to blood loss

e publish a memoir of Bailey Ashford this week, hich Colonel Clayton Lane records his valuable ours

PROGNOSIS OF INTUSSUSCEPTION

NOTABLE reduction in the mortality figures for sease such as intussusception is worthy of record an analysis[1] of the results of treatment in 372 es *occurring between the years 1908 and 1932,* E Ladd and R E Gross of Boston are able to show improvement from 27 deaths per 100 cases in the twenty years to 12 in the last five The important ors in achieving this result they consider to e been two, namely (1) admission of the children ospital in the beginning stages of the illness, and restriction to a minimum of operative procedure *ection of intestine in these cases is particularly* l, of 30 resections only two were successful d and Gross believe that with increased skill reduction and more faith in the recuperative er of the intestine very few resections will be nd necessary In the 90 cases seen in the last years resection was only done twice By waiting w minutes it was often found that bowel which oked bluish, discoloured and of questionable ility" improved sufficiently to be left in situ seriousness of the alternative must justify a *siderable risk in so leaving it Procedures such as* endicectomy, resection of a lipoma, or of a kel's diverticulum are best left to future opera , done at the time of the operation for reduction decrease materially the chance of recovery In vate practice the mortality is lower, because the s are seen earlier In the authors' experience per cent were seen within 36 hours, within which iod operation seems to be safe Of the last 90 s, 60 were seen within 36 hours of onset and were ted by immediate operation without a death y insist that no time should be lost in getting the ient on the operating table; pre operative treat t, *such as intravenous fluid, is given only in very* cases, and then only while the theatre is being pared. After operation, fluids are given as necessary ombat shock and dehydration A third factor which the authors attribute the decrease in tality is the attention paid to post-operative tment They permit no milk—not even the breast ll vomiting has ceased, and undiluted milk is not n before the fourth to fifth day

iagnosis, as had been repeatedly stated, depends clinical picture which is quite typical The mother often give the exact moment of onset, which is den and characterised by pain and vomiting, ally subsiding completely between attacks Vomit- was present in 90 per cent of Ladd and Gross's , pain in 82 per cent, blood and mucus appeared he stools in 88 per cent. On examination they nd a palpable tumour in the high proportion of per cent of their cases, and a rectal mass in 25 per cent *The latter sign has a bad prognostic significance,* except, as they point out, where it is explained by the low site of the intussusception, the colon alone being involved *Reduction of the intussusception* should be as far as possible done without delivery of the bowel. It is usually impossible to complete the operation without delivery of the cæcum *In difficult cases the authors consider it justifiable to use considerable force,* rather than to resort to resection, incision, or enterostomy Of the deaths, 84 per cent occurred within 48 hours of *admission* The causes in four fifths of the cases, were shock, dehydration, and toxicity

THE BLOOD IN SYPHILIS

ALTERATIONS in the blood in syphilis are not very clearly established, and many text books omit to mention any significant cytological changes apart from the anæmias seen in the congenital disease Nevertheless investigations at the Rockefeller Institute[1] on the blood of animals at several stages before and after inoculation show definite changes which can also be found in the human subject While the infection is active the *most obvious are increases* in white cells and platelets and the absolute number of neutrophils and monocytes, with a drop in the absolute lymphocyte count By supravital *technique* it can be *shown too that there is a large increase in monocyte cells in the actively growing syphilitic* lesions themselves In the latent stages when all activity has subsided—*a state of affairs equivalent to* unhealed tertiary syphilis in man—the only significant change is a drop in the total red cell count and in the hæmoglobin Its extent was not very startling but it was definite, and *blood counts in tertiary* human syphilis show an exactly similar slight anæmia which clears up under antisyphilitic treatment

ANILINE CANCER

NOTWITHSTANDING continued laboratory research, knowledge to day regarding the origin of cancer rests very largely upon study of occupational growths Most of such growths occur on the skin, due to contact with coal tar products, whether pitch, tar, or mineral oils, but others occur in the bladders of men manipulating aniline products, and in the lungs of miners getting radio active ores The last named may have close relation to cancers among X ray operators The fact that bladder tumours in general have apparently become much more *frequent* during the last 30 or 40 years is noted by W C Hueper in a review[2] of cancer of the urinary bladder in workers of chemical dye factories and dyeing establishments. He points out the corresponding increase of primary lung carcinomata dating from about the same time and coinciding with the constantly extended use of synthetic chemical products, with which most of the population have come into constant and close contact The author suggests that caution should be used in prescribing over prolonged periods amido and nitro-compounds of the aromatic bases for therapeutic purposes, unless their potential carcinogenic property has been definitely investigated and found to be negligible Aniline cancers of the bladder differ from skin carcinomata in that the causative agent has to pass through the body, being carried by the blood and excreted by the kidneys before it reaches the bladder

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[1] Arch of Surg, September 1934, p 365

[1] Rosahn P D, Pearce, L and Chesney A M J exp Med 1934 lx 11 reprinted in studies from Rockefeller Inst for Med Research [illegible]

[2] J [illegible] Industr Hyg September 1934

The exact conformation of the agent may be modified during this passage, but its activity might not necessarily be diminished. Herein may lie the way in which such organs as the female breast and uterus, which undergo periodic activities, are affected by carcinogenic agents absorbed possibly from the gastro-intestinal canal. Once the carcinogenic power of distillation products of not only coal, but of other organic matter, is allowed, other cancers than those just instanced may be attributed to such products. Even X ray tumours may be ascribed to the rays so injuring the tissues as to form "autogenous" tars, and E. L. Kennaway[3] has shown that tars, prepared by destructive distillation of human skin, are carcinogenic.

INFECTION FROM THE NASOPHARYNX

FOR his presidential address to the section of otology of the Royal Society of Medicine on Nov 2nd, Mr. E. A. Peters took as his subject infection of the Eustachian tube and pulmonary tract. Comparing the ways in which infection gains entrance to the two systems, he pointed out that the proximal part of the Eustachian tube is normally closed but is opened by muscular action, while the pulmonary tract is guarded by sphincteric muscles at the level of the larynx Rhinopharyngitis, set up by organisms introduced with inspired air, is a preliminary to infection of both systems though, in acute cases, infection of rhinopharynx and lungs may be contemporaneous Chronic nasal sinusitis and septic tonsils may be responsible for bronchiectasis The efficient action of the nose plays an important part in controlling or diminishing attacks of rhinopharyngitis, and the reduction of infection of this region after correction of the nose and enucleation of the tonsils is a matter of everyday experience. Two types of infection have recently been described · the leucocytic, said to be due to bacterial infection, which is the common catarrhal form and is followed by hypertrophy of connective tissue; and the serous, of virus origin, characterised by destruction of epithelium and atrophy of connective tissue These two types, said Mr Peters, correspond respectively to the vasomotor hypertrophy of obstructed noses and to the dry and atrophic rhinitis common in patent noses Dust is a factor in the infection of these regions, acting as a vehicle for the conveyance of micro-organisms and as an irritant predisposing to bacterial invasion; W. H. Jones has shown that sericite, an impalpable powder composed of a silicate of aluminium and potassium, is the cause of miners' phthisis, and E. H. Kettle finds that kaolin is equally dangerous Inflammation spreads by direct extension both in the pulmonary and Eustachian tracts, and Mr Peters quoted Findlay's statement that suppurative otitis media is the commonest complication of broncho-pneumonia in children It is probable, he added, that in such cases both tracts are infected from the nasopharynx.

BILE-PIGMENT AND REGENERATION OF HÆMOGLOBIN

IT is still uncertain whether bile-pigment is conserved by absorption for purposes of hæmoglobin regeneration or whether it is a waste product. From experimental work on dogs with bile fistulas, Whipple and his colleagues have decided that it is a waste product They found that in dogs made anæmic by hæmorrhage but in good nutritional condition they could recover quantitatively bile-pigment they administered by mouth or intravenously form of hæmoglobin They concluded therefo conservation of such pigments does not take It must be remembered, however, that these experiments the dogs were getting an diet, and presumably the stores of hæmo factors in their bodies were not unduly de Human beings—with chronic hypochromic a for instance—are often in an extremely poor tional state, and Patek and Minot[1] have re produced evidence that in such cases at an bile-pigment is certainly utilised by the b blood regeneration Concentrated bile pigme itself induced no reticulocyte response in patients, but there was a definite increa hæmoglobin After a reticulocyte response had evoked by suboptimal doses of iron, administr of bile-pigment with the same dose of iro followed by a second reticulocyte response, o greater magnitude than the first. This indicates bile-pigment in some unknown manner can fac either the absorption or utilisation of iron. patient who in 14 months had failed to re normal hæmoglobin level with large doses o promptly increased her hæmoglobin conc when bile-pigment was given in addition observations suggest that in certain cases of chromic anæmia there may be (besides iron defic a lack of some useful material that is contai bile-pigment—a lack that should be made go prescribing as far as possible an adequate di single therapeutic remedy like iron, though work wonders, will not necessarily take the p sufficient quantities of the right kind of food.

THE Minister of Health will be the principal at the annual dinner of the Society of Medical O of Health, to be held at the May Fair Hotel Thursday, Nov 22nd, at 7 10 for 7 30 P.M. R Veitch Clark, president of the society, will the chair, and Drs T. W Naylor Barlow and Buchan are to be guests of honour in recogn their conspicuous services to the Society.

BRITISH SOCIAL HYGIENE COUNCIL —An ordinary general meeting of the council was on Monday, Nov 12th, when a report was mitted of the conference between British and national representatives held in London in July, for its subject the actions to be taken in combating in women as occurring specially in the East At meeting resolutions were adopted unanimously the suggestion of the League of Nations Advisory mission that a conference of the different authori countries in the East should be summoned, und auspices of the League of Nations, to consider obtaining closer coöperation and greater exchan information Other resolutions urged that organisations, where they exist in the East, shou constructive help, while they particularly affirm the suppression of the traffic in women is an ideal able to all religions and cultures The report conference of British and International Represen held in July is published by the joint standing com of the British Social Hygiene Council, and the national Conference of Missionary Societies, at House, Carteret-street, London, S W 1, and summary of the document can be obtained fro council.

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[3] Brit. Med Jour, 1925, ii,

[1] Patek, A J, Jr, and Minot, G. R. Amer Jo Sci, 1934, clxxxviii, 206

PROGNOSIS

A Series of Signed Articles contributed by invitation

XVII.—THE PROGNOSIS IN URINARY TUBERCULOSIS

RINARY tuberculosis is always secondary to some r focus in the body The most common sources which the urinary organs become infected are the lungs, (2) the pleura, peribronchial lymph ds, &c, and (3) bone or joint tubercle The nosis depends greatly on the state of the primary s Here I shall only consider cases where the nary focus is either apparently healed, or at quiescent, so that the prognosis depends on the rse taken by the disease in the urinary organs on the treatment adopted

Following Medical Treatment

nder this heading are included all cases where treatment has been non operative, irrespective hether it has been carried out at home or in a torium, whether heliotherapy or tuberculin or r methods have been employed In some of e cases operation has been contra indicated, lly because both kidneys are involved, in others, ation has been advised but refused by the ent

THE OCCLUDED KIDNEY

is now generally admitted that medical treatment is powerless to cure, there are no specimens ealed renal tubercle in the museums However, few instances the patient may lose all his symp s, and the urine becomes clear and free from rcle bacilli In most of these cases the infected ey becomes shut off from the lower urinary t by obliteration of the lumen of the ureter It lly becomes transformed into a mass of putty caseous material, but it may remain as a series vities communicating with each other and lined a tuberculous granulation tissue Occlusion of ureter followed by a disappearance of the patient's ptoms has been called "autonephrectomy" but term is bad, as the patient's condition is not parable with his state after nephrectomy he is free from risk, since an occluded kidney may give to a perinephritic or a psoas abscess or may be starting point of a generalised infection It ains as a rule, early tubercles, and even the ous material is often found to be infective when ted into a guinea pig No one who has seen the d and striking improvement in the patient's ral health after removal of such an organ can t that much toxin is absorbed from an occluded ey

a much smaller proportion of cases a portion one kidney may become occluded, while the ainder functions This condition can now be onstrated easily by intravenous pyelography ephrectomy is still indicated, as patients with ial occlusion run the same risk as those with kidney totally occluded

EXPECTATION OF LIFE

nce medical treatment has been proved unavailing ring the patient, it only remains to see how long may be expected to live under it Much of our rmation on this point is derived from the careful dies compiled by Wildbolz and Rafin

ildbolz collected 316 cases of urinary tuberculosis ed without operation In this series he was careful lude only those in which a bacteriological diagnosis had been made and to exclude those in which the urinary infection occurred as a complication of active phthisis At the time of the inquiry, 218 of the 316 patients were dead and 98 were living The duration of the disease was as follows —

	Dead	*Living*
Less than 2 years	99	27
From 3 to 5 ,,	86	38
From 6 to 10 ,,	20	18
Over 10 ,,	8	12
Duration unknown	5	3

Sixty-eight out of the 98 living patients suffered acutely from their urinary symptoms, in the remaining 30 these symptoms had gradually diminished and the patients were comparatively comfortable This did not necessarily mean that the disease was cured, or was becoming cured

A cessation of symptoms, often of many years' duration, may be accompanied by progressive destruction of the kidney, as evidenced by a diminution in its functional power Still a few patients do survive for 20 years or even longer As a rule, patients with bilateral infection die within a few years, though a long survival may occasionally be noted As an example I may quote one case under my care The patient was a man of 23, who had suffered from frequent and painful micturition for four years I found that the left kidney was completely destroyed and the right slightly infected This patient lived for over 12 years after the first examination He was twice admitted into a home for the dying, and twice discharged from it For several years there was a decided amelioration of his symptoms, but repeated functional tests showed a progressive diminution in the renal excretion Death was finally due to uremia

Rafin gives the following figures based on 168 cases examined and followed up by himself At the time the tables were made out, 91 patients had died and 77 were living The duration of the disease was as follows —

	Dead	Living
Less than 2 years .	29	18
From 3 to 5 ,, . .	30	19
From 6 to 10 ,, . .	27	28
Over 10 ,, .	5 ..	12

Rafin also points out that in his cases the disease ran a longer course in the female than in the male In the fatal cases the average duration was 3¾ years in the male and 5¾ years in the female, while among those that were living the average duration of the disease was 4 years and 4 months for the males and 5 years and 5 months for the females He ascribes this difference to the frequency with which genital tuberculosis is added as a complication in the male

Both these sets of figures agree in showing that most patients die within five years of the onset of the disease, and that although survivals of 10 to 20 years may be met with they are quite exceptional In most cases death was directly due to the renal tuberculosis or to some complication of it, death from intercurrent disease being quite rare.

Following Surgical Treatment

Under this heading one must consider (1) operative mortality, (2) late mortality, and (3) expectation of a cure.

OPERATIVE MORTALITY

At the present time the mortality following a nephrectomy for renal tuberculosis is about 5 per cent

This is the average figure obtained from a large number of different sources The operative mortality at St. Peter's Hospital is slightly below this average, and three large sets of figures published recently give a distinctly lower mortality. They are —

	Operations	Mortality (per cent).
Wildbolz (1924)	500 . . .	2 4
Mayo Clinic (1924)	845	2 7
Marion (1930)	561	4 4

The mortality of the operation has fallen greatly during the last 30 years. At the beginning of this century it was about 20 per cent; shortly before the war it was from 6 to 10 per cent, and post-war figures show a still further improvement.

The mortality from *renal failure,* which accounted for about a third of the total mortality before 1900, has now been entirely eliminated. This is due to the routine use of the cystoscope and ureteric catheter before operation At the present time the surgeon always ascertains the excretory function of the "opposite" kidney before proposing nephrectomy, and post-operative anuria due to insufficiency of the remaining kidney is practically unknown

Abdominal and pulmonary complications account for the greater part of the present-day mortality. Among the former *peritonitis* and *injury of the bowel* are the most common. Accidental tears of the peritoneum are harmless if they are recognised and sutured at the time, but if they are not seen, and if the wound becomes infected, they invariably give rise to peritonitis In the series published by Judd and Scholl from the Mayo Clinic, 5 out of 23 post-operative deaths were due to peritonitis. The colon is usually involved when the bowel is injured, but the duodenum may be torn, and this type of injury is more dangerous, as a duodenal fistula is followed by pancreatic digestion of the wound and extensive suppuration. The bowel may be completely torn during operation and its contents extravasated into the wound, or its outer coats only may be ruptured. In this last case the injury may not be noticed at the time, and may not be suspected till a fæcal fistula forms Injury to a blood-vessel supplying the bowel may also give rise to a fæcal fistula These abdominal injuries only occur when the kidney is the seat of advanced tubercle and has become adherent to the surrounding structures; they ought to become less common if the lesion is diagnosed and operated on at an early stage Paralytic ileus may occur without injury to the peritoneum or the bowel, but, in my experience, it is comparatively rare

Injury of the pleura is also harmless provided it is recognised and sutured, but an empyema often results if the wound becomes infected. The mortality from pneumonia and massive collapse of the lung may be reduced in the future by the use of more suitable anæsthetics At the present time I use avertin, nitrous oxide, and oxygen anæsthesia for most kidney operations A high spinal anæsthesia paralyses the lower intercostal muscles, and may predispose the patient to pneumonia

Operative *infection of the wound with tuberculous material* is a very serious complication If a superficial abscess in the kidney is ruptured during delivery, or if the renal pelvis or ureter is accidentally torn, the whole wound may open up about a fortnight after the operation, its edges become covered with tuberculous granulation tissue, and there is a profuse discharge, the patient being seriously ill If left to itself, the wound takes about 6 to 12 months to heal, but as soon as the acute sepsis has been controlled the granulation tissue may be d away and the wound closed by secondary Miliary tuberculosis is liable to occur durin valescence, and in any case the patient's cha an ultimate recovery is diminished However, t operative technique is completely satisfact tuberculous fistula is unlikely to develop.

Miliary tuberculosis and meningitis are by continental writers as a comparatively cause of death after nephrectomy, but th the experience at the Mayo Clinic or in this co

LATE MORTALITY

Deaths occurring from tuberculosis more th month after operation come under this heading there is some uncertainty as to the exact death; a further source of error arises if the mor from intercurrent disease is included.

Judd and Scholl followed up 611 patients fro Mayo Clinic and found that 358 were apparently 62 still had evidence of urinary tubercle, and 191 dead, of which 168 patients died after leaving the giving a total late mortality of 28 per cent. Since 72 out of these 168 patients died from tubercle disease, the late mortality from tubercle was 12 per cent.

Wildbolz estimates the total late mortality at 15 cent His own figures for 500 operations were an mortality of 12, and a late mortality of 87 17 cases of intercurrent disease), the total 99, or just under 20 per cent

Perhaps the most important point to d is the frequency with which the remaining becomes tuberculous. All statistics give a able mortality from this cause. Since renal is *always secondary to some other focus,* there a priori reason why the second kidney sho be infected from it after removal of the first practice death from this cause usually happens within the first two years, suggesting that organs were involved at the time of the In 19 of Wildbolz's cases death was due to this c in 7 of them the infection of the second kid either certain or probable at the time of the o tion, while in the remaining 12, death occurred soon after (1 to 1½ years) that previous infe may also be presumed. True *post-operative* i tion can only be diagnosed with certainty when urine remains free from pus and bacilli for some after operation and later becomes infected. cases of this nature are very rare; according Israel 1 6 per cent, and to Wildbolz less than 1 cent. Since post-mortem findings of involv the second kidney are exceedingly common no operation has been performed, it may be de that the second kidney generally becomes inf from the first and not from the primary fo *and that early nephrectomy is the surest* means preserving the healthy kidney.

EXPECTATION OF CURE

Practically always the patient's condition greatly immediately after operation The app gets better, weight and strength increase, and distressing symptoms of pain and frequency micturition diminish. That the urine usually c tains pus and tubercle bacilli is due to vesical infla ment, but the bladder tends to heal *once* the inf kidney is removed If the vesical lesions are they usually disappear in about six months, b the bladder is extensively ulcerated it usually ta 18 months to 2 years to recover. Even then capacity may be diminished owing to scar tis all, so that even though the urine may be free bacilli some degree of frequency of micturition ains permanently

mediately after operation medical treatment ry useful The patient not only has to combat residual infection of his urinary organs but to end with the other tuberculous foci in his system torium treatment, or a prolonged stay in a ntain resort, is often the deciding factor in ting a cure It is well known that patients ood circumstances *do much better than those in* poorer classes, and this is due in great measure etter post operative treatment

at the end of two years the urine still contains and tubercle bacilli, the patient should be care re examined He may have (1) an involvement le remaining kidney, (2) a persisting focus in the er of the nephrectomised side, (3) a persisting al tuberculosis, or (4) in the male, genital ircle If the remaining kidney is involved, the nosis is hopeless, it is also bad if the prostate seminal vesicles are extensively diseased A erectomy gives good results when the infection sists in the ureter, and the vesical lesions usually provided the remainder of the genito urinary t is healthy

en when the urine becomes clear and free from rcle bacilli, one must not assume that the patient ured *Remissions are not uncommon* and may of long duration The criterion of cure now rally accepted is that the patient must be with symptoms and signs of disease, and that his s must be free from pus and tubercle bacilli it least three years Unfortunately many of the stics are published too soon to comply with this rion and tend therefore to undue optimism ng into account only figures published since the from 55 to 60 per cent of the patients were idered to be cured, it is satisfactory that figures n after a ten year interval show almost as good sult The average of the figures published by in, Wildbolz, and Suter is 51 per cent This be taken as the most correct estimate of the ctation of a permanent cure after nephrectomy also shows that there are comparatively few pses in patients who are apparently well three s after operation

he *sex* and *age* of the patient have a considerable ence in the prognosis It is universally admitted the late mortality is greater in the male than he female, owing to the prevalence of genital ircle The expectation of a cure in males with isting genital tuberculosis is only half that of with intact sexual organs The prognosis in ren is extremely bad, not only because the se is more commonly bilateral Falci found only 6 per cent of the children with unilateral ons operated on in Marion's clinic were cured

he condition of the *primary focus* also affects prognosis If it is quiescent the outlook is h more favourable than if it is active Active ition is in most cases, a contraindication to ation though a healed or quiescent pulmonary s is not

he average results obtained by the surgical tment of urinary tuberculosis are as follows ative mortality 3 per cent, late mortality, 20 per cent; permanent cure, 50 per cent The aining patients usually live for many years ough they harbour foci of active tuberculosis

J SWIFT JOLY, MD FRCS,
Senior Surgeon, St Peter's Hospital for Stone

THE SERVICES

SHORT-SERVICE COMMISSIONS IN THE NAVY

UNDER the new conditions of entry and service in the medical branch inaugurated last May, all entries are now on a short-service basis, and transfer to the permanent list is at Admiralty discretion on completion of five years' service A new fleet order announces that the number of medical officers on the permanent list will be mainly regulated so as to afford an adequate flow of promotion to the higher ranks but with due *regard to the numbers of short-service* officers desiring to be transferred to that list As soon as possible after Jan 1st, 1935, short service surgeon lieutenants of 1931 seniority are to report through the usual channels whether or not they wish to be considered for transfer to the permanent list About March 1935, applications for transfer will be *considered together, and the selections made* will be promulgated in due course

ROYAL NAVAL MEDICAL SERVICE

Surg Lt Comdr C T Hyatt to *Pembroke* for R N B, temp and to *Shropshire*

Surg Lt Comdr (D) D C Eglington to *Pembroke* for R N B

Surg Lt T F Davies to *Lowestoft*

Mr R S Jenkins entered as Act Surg Lt (D), and appointed to *Victory* for R N Hospital, Haslar

ROYAL NAVAL VOLUNTEER RESERVE

Surg Lts C G Batty Smith, resignation accepted and R Pedlow to *Victory* for R N B

ROYAL ARMY MEDICAL CORPS

Short Serv Commn.—Lt (on prob) K H Clark is restd to the estabt

TERRITORIAL ARMY

Col A R Moodie T D M D F R C S Edin K H S, vacates the appt of A D M S, 51st (Highland) Div on completion of tenure

Capt A A Finnigan, M.C, ceases to hold a commn in the T A

Capt C W Healey M C, to be Maj

H F Apthorp Webb to be Lt

Lt M S Good, from 4th Bn Oxf and Bucks, L I, to be Lt

G G Farrington (late Offr Cadet Univ of Lond Contgt (Med Unit), Sen Div, O T C) to be Lt

I D Fitzpatrick to be Lt

The King has conferred the Efficiency Decoration upon the undermentioned officers under the terms of the Royal Warrant dated Sept 23rd 1930 —

Col H F Humphreys, O B E, M C M B, K H P A D M S, 48th (S Midland) Div

Lt Col R A Broderick D S O, M C, M B

Maj A C Haddow M B

ROYAL AIR FORCE

Squadron Leader I I Johnson to Station Headquarters North Weald, for duty as Medical Officer

Squadron Leader I Parry Evans to Central Medical Establishment for duty as Medical Officer

Flight Lt P H Perkins to Headquarters R A F, Middle East Cairo

Flying Offr I Markas to No 1 School of Technical Training (Apprentices) Halton

Dental Branch—Flying Offr C P Stone is promoted to the rank of Flight Lt

RESERVE OF AIR FORCE OFFICERS

Flight Lt G T O'Brien relinquishes his commn on completion of service

INDIAN MEDICAL SERVICE

Maj W J S Ingram, MC, to be Lt Col

Lt [illegible] to be Capt

Lt Col J M [illegible] C I E, retires

Capt B R [illegible]

SPECIAL ARTICLES

THE EVERST OXYGEN APPARATUS, 1933*

By Raymond Greene, B.M Oxon.

SCHORSTEIN RESEARCH FELLOW IN THE UNIVERSITY OF OXFORD
MEDICAL OFFICER, EVEREST EXPEDITION, 1933;
SECRETARY, COMMITTEE ON THE SUPPLY OF
OXYGEN, BRITISH ASSOCIATION

In 1931 a discussion took place before the section of physiology of the British Association on the Limits placed on Muscular Exercise by Low Barometric Pressures. The discussion was opened by Prof. J. Barcroft, who was followed by Mr. N. E. Odell, of the Everest Expedition of 1924, and by myself, then recently returned from the Kamet Expedition. In the course of this discussion it was made clear that no efficient oxygen apparatus for the use of climbers at great altitudes had as yet been designed. A committee was therefore formed, consisting of Prof. Barcroft (chairman), Mr. G. S. Adair, Major J A. Sadd, Mr. Odell, and myself.

No Everest expedition was at that time seriously contemplated. But in the summer of 1932 permission to organise an expedition was received from the late Dalai Lama. The committee met on Oct 26th, 1932, all its members being present. Wing-Commander G S. Marshall, R.A.F, Mr. R. H. Gorman Davis, of Messrs. Siebe Gorman and Co, and Dr. W. W. McLean, who had been appointed assistant medical officer to the forthcoming expedition, were present by invitation. After considerable discussion it was decided that an experimental apparatus should be produced and submitted to the committee for criticism at the earliest opportunity.

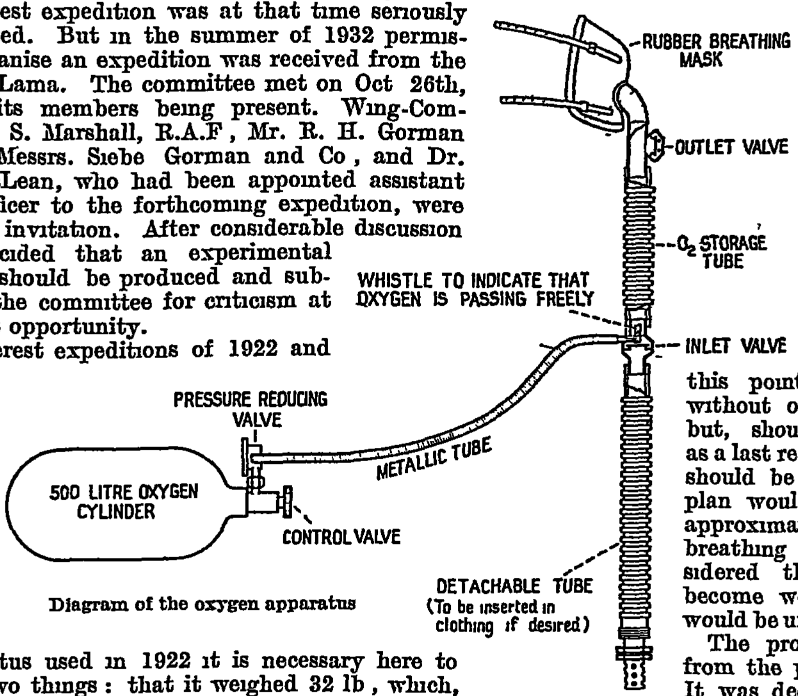
RUBBER BREATHING MASK
OUTLET VALVE
O₂ STORAGE TUBE
WHISTLE TO INDICATE THAT OXYGEN IS PASSING FREELY
INLET VALVE
PRESSURE REDUCING VALVE
METALLIC TUBE
500 LITRE OXYGEN CYLINDER
CONTROL VALVE
DETACHABLE TUBE (To be inserted in clothing if desired)

Diagram of the oxygen apparatus

The Everest expeditions of 1922 and 1924 had both been equipped with oxygen apparatus, but the apparatus had been notoriously unsatisfactory. Of the apparatus used in 1922 it is necessary here to say only two things: that it weighed 32 lb, which, with the wisdom after the event of which so many of us are capable, we know to be an impracticable weight, and that of it Captain Finch[1] was constrained to write:—

> "The apparatus—through no fault of the makers, who had, indeed, done their work admirably—leaked very badly, and to get them into satisfactory working order, four days of hard toil with soldering-iron, hacksaw, pliers, and all the other paraphernalia of a fitter's shop were necessary Our workshop was in the open The temperature played up and down about 0° F., but inclined more to the negative side of that irrational scale The masks from which the oxygen was to be breathed proved useless, but by tackling the problem with a little thought and much cheerfulness a satisfactory substitute was eventually evolved, making it possible to use the oxygen apparatus in an efficient manner"

The apparatus used in 1924 originally weighed about 33 lb., but was reduced by the engineering Irvine to about 22 lb. This skill had to be in the most trying conditions and appar necessary even at Camp VI.[2] Mallory wrote

> "Irvine has done the principal engineering wor apparatus—what was provided was full of faults and he has practically invented a new using up only a few of the old parts and cutting that was useless and likely to cause trouble"

Odell's geological work was interfered wi "preoccupation with the oxygen apparatus which necessitated continual work on it whole of the outward journey." Brigadier wrote: "Oxygen apparatus keeps one or busy every halt or short march."

PRELIMINARY CONSIDERATIONS

Before considering the design of the was necessary to form a clear idea of the which the oxygen would be put Many di with past and future members of Everest exp resulted in the ad of the plan wh suggested to this in 1932,[6] which slight modificatio that employed in It was decided should permit no oxygen ever should be except therape until Camp VI. been reached this point the should rely acclimatisation. B this point, attempts to without oxygen should be but, should these attempt as a last resort the oxygen should be brought into use. plan would leave the party approximately 2000 feet of breathing oxygen It was sidered that, the party become well acclimatised, would be unnecessary on the

The problem was then from the point of view of It was decided that the equipment must weigh not more than 15 lb gations showed that the lightest oxygen available was the Mark IV. R A F 500 litre cylinder, which when charged weighs about Therefore only one cylinder could be carried time A complicated dumping system would tainly be impossible owing to the inevitable of bad weather in the later stage of the exp at which it was planned that the apparatus be used. Therefore, on this plan of action 500 litres would be all that the climber co upon to climb the last 2000 feet of the mo It was thought that in all probability the a of 2 litres of oxygen per minute to the atmos air would enable the climber to ascend a 500 feet in an hour, so that the 500 litres would be sufficient for the last 2000 feet event Camp VI. was placed at 27,400 feet. only 1600 feet of ascent for the last day

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[*] A report to the section of physiology of the British Association, September, 1934

uch a contingency it was decided that the valve ie apparatus should be made to deliver a pre-gaged amount up to 3 litres a minute Still ming a speed of 500 feet an hour the apparatus ld in the event have been capable of supplying litres a minute over the distance between VI and the summit

the absence of any information on the amount ded oxygen actually required by an acclimatised we felt justified therefore in deciding upon an ratus consisting of a 500 litre cylinder, fitted the lightest possible adjustable reducing valve rk VIII) capable of supplying 0–3 litres of en per minute

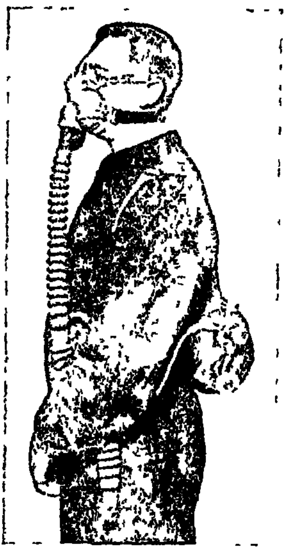
e next problem to be solved was that of the ntion of waste, for, with so small a margin, a slight waste of oxygen would be of importance former idea of closing the oxygen inlet with the ie during expiration was considered to impose great a responsibility on a climber already aching the limit of endurance But clearly en could not be permitted to enter the face-continuously and be swept away during expira-All the oxygen must be available to the con-r The suggestion of allowing the oxygen to mulate during expiration in a rubber bag was doned owing to the danger of the bag "perish-in the low temperature prevailing on Everest is decided to lead the oxygen from the reducing by means of a flexible metal tube into the part of a broad flexible corrugated tube, closed o bottom by an inlet valve, and hanging freely a chamois-covered face mask During expira-the valve would close and oxygen would accu-te in the broad gauge tube, to be swept upwards tmospheric air into the mask when in inspira-the inlet valve was opened Assuming the mum delivery of 3 litres a minute, a simple lation gave the required length of "storage " of any given diameter

THE DESIGN

ere remained now the design of the mask s had previously been criticised owing to their , of becoming frozen to the beard by an accumu-a of saliva, sweat, and moisture from the breath ust be admitted that this criticism has not been ome Experiments were made with a mask of gas mask pattern (Mark IV), which enclosed the e face and incorporated a pair of goggles It however, difficult to combine this type of mask the rest of the climbing equipment which had his time already been manufactured and shipped dia The suggestion is still worthy of considera

In case the face mask should, as Mr Odell dered, prove unwearable, we took with us r wide bore tubes as possible substitutes It is hy of note, however, that though the oxygen s were never tested on the mountain, the hews respirators, with a face piece of similar n but without chamois leather, were worn for nged periods by several members of the expedi They found the freezing of their moisture a tus but not incapacitating disadvantage The trophobia which has been referred to as a dis ntage of face masks was noticed only at night, h, of course, the oxygen masks could not be d

e apparatus was manufactured by Messrs Siebe man and Co under the personal supervision of Davis, to whose interest the Everest Expedition greatly indebted. The apparatus was supplied s by the generosity of his firm Twelve oxygen cylinders were lent by Messrs Siebe Gorman and 20 by the Air Ministry, through the kind offices of Mr H E Wimperis In its final form, after several weight-cutting modifications suggested by Wing-Commander Marshall, and the insertion of a whistle to show the passage of oxygen, as suggested by Prof Barcroft, it weighed 12 lb 12 oz fully charged This weight included the webbing harness in which the cylinder lay snugly in the small of the climber's back The whistle will probably be omitted in the future The noise is intensely irritating As Wing Commander Marshall, who made the whistles, himself pointed out, "if the climbers are unable to go on they must go back, and it is of no importance to them to know whether their failure is in spite of added oxygen or due to the fact that oxygen is not added If the oxygen fails they cannot do anything about it "



The apparatus in use

TESTS

It was determined that as far as possible the experiences of past expeditions, who, in uncomfortable surroundings and with few tools, had been forced to repair and, in 1924, redesign their apparatus should, as far as possible, be obviated Time was not available to test the apparatus in the Alps, but such tests as were possible in England were made I took it into the low-pressure chamber at Oxford, where it was worn at different "altitudes" by Dr F G Kergin, under my observation At a pressure corresponding to 23,000 feet he was able when receiving from the apparatus 1.5 litres of oxygen per minute to do on a bicycle ergometer work which corresponded to climbing at 1200 feet an hour without any signs of cyanosis The same work without oxygen produced deep cyanosis which immediately disappeared on breathing oxygen The reaction of the apparatus to cold was tested in the low temperature research laboratory at Cambridge by Prof Barcroft at a temperature of −28° (18° below zero F). He found that the valve worked well the oxygen coming over evenly for half an hour The rubber became appreciably harder but functioned well Prof Barcroft was wearing a Mark IV. mask He reported that the goggles became covered with frost, so that his vision was almost completely obscured The mask gave a little "click" as he detached it from his forehead, as though in time it might have frozen on. There was a certain amount of condensed vapour within the mask but no saliva

The testing of the reaction of the rubber components of the apparatus was undertaken by Major J. A Sadd at the Chemical Defence Experimental Station at Porton. A connecting tube, a face-piece, an outlet valve, and a piece of elastic webbing were subjected to temperatures ranging from −25° to −33° C. for a period of four hours followed by a period of six hours. All samples became somewhat harder and stiffer as judged by compression and pull tests carried out with tongs. But they retained their characteristic rubber properties and showed no tendency to crack, tear, or remain permanently distorted. They recovered their original properties at normal temperatures.

The cylinders were thoroughly tested by Messrs. Siebe Gorman and Co. in London and again in Calcutta under my supervision by the Lightfoot Refrigeration Co., Ltd., to whom the thanks of the Expedition are due, in order to ensure that no damage had been done on the journey to India. In Calcutta every cylinder was found to contain oxygen at a pressure of 140 atmospheres with practically no variation. The valves of the cylinders were tested and found to be absolutely tight The tests were repeated by me at Base Camp on Everest. Every cylinder was still full with the exception of one which was found to have its tap fully turned on and was naturally empty. No repair work or redesigning was necessary on any part of the apparatus.

POSSIBILITIES FOR THE FUTURE

As I have told elsewhere, the apparatus was never tested on Everest. It was intended that it should be used only if attempts to reach the summit without it had failed. At the end of the "unoxygenated" attempts the weather became very bad and the condition of the snow dangerous The party retreated to Base Camp to await better conditions, leaving most of the oxygen apparatus at Camp IV. The better conditions never came Those who were still sufficiently fit made one last attempt, but reached only to Camp III Beyond that the avalanching slopes of the North Col made progress impossible.

The lines along which improvements in the apparatus described may usefully be sought appear well defined. It is hardly possible, I think, to make it simpler and any attempt to make it more complicated should be examined with great suspicion. The apparatus will be worn on Everest, not in a comfortable laboratory nor even on the comparatively low warm mountains of Europe. But reduction in the weight of the cylinder material would make it possible either to carry a larger supply of gas or to reduce the weight of the total apparatus I am not yet satisfied with the face-piece, the tendency of which to deposit icicles of condensed moisture in the beard is a serious disadvantage Lastly it would be advantageous to breathe, were it possible, warm moist air. This can be done with the present apparatus by breathing air from inside the clothing, but there seems to be a possibility of chilling the body by so doing. It would be better if the principle of the Matthews respirator could be incorporated and the damp warm expired air used for warming and damping the inspired air.

REFERENCES

1 Finch, G The Assault on Mount Everest, London, 1923, p 235.
2 Odell, N E. The Fight for Everest, London, 1925, p. 131.
3 Mallory, G · Ibid, p 222
4. Odell, N E: Ibid, p 290.
5 Norton, E F. Ibid, p. 340.
6. Greene, C R.: Na[illegible], Nov [illegible]

MEDICINE AND THE LAW

Damages for Negligence on Part of Do

JUDGMENT was given against a doctor at assizes last week in an action for dama negligence at the instance of a father and son boy was a panel patient and the defendant appears to have signed a certificate st to be fit for work. It was suggested that a patient whose right lung showed long tuberculosis and whose left lung had recently affected, had suffered through the non-de of the disease at the doctor's examination Mr Justice Humphreys, who had heard the at the Exeter assizes but had deferred came to the conclusion that the doctor failed duty towards his patient and was guilty of He did not think this negligence was respons the terrible condition of the boy's health to any appreciable degree, but he held the failure to detect the disease on a certain lead to loss assessable at the figure of £250 De of the disease would have been followed by care and treatment which would have benefited patient, it would have "given him a chance" would have prevented his being exposed to wintry weather soon afterwards An appl for a stay of execution was refused

Treatment for Deafness: Licence Re

The London County Council's control (under Act) over massage and similar establishments it last week to revoke a licence given to Mary Laboratories, Ltd., for carrying on massage diathermy. Among other conditions licence are required to have suitable premises, to treatment through persons who possess such qualifications as are reasonably necessary, comply with certain L C C. rules Complaint made against the company on these three The public control officer called as witnesses persons who had received treatment for Mr. A said he visited the establishment as the of its advertisements, he was told his ear dru defective; he had to put his index-fingers in and thrust them into his ears when an electric was turned on When a member of the staff him there was a decided improvement in his he disagreed He went later to a Harley doctor who said nothing could be done for Mrs B spoke of similar unsuccessful trea Mr C was told that in a few months' time he be able to go to the theatre and hear every When, after about 50 treatments, he told the he was getting worse, the answer was that the ment had never been known to fail He then an offer, which was not accepted, to pay 10 g for further treatment provided he was cured nothing if he was not Mr D, another p described his treatment; he eventually co a medical practitioner and was told that one useless and he would have to be careful with the These witnesses gave evidence as to the fee were charged; one newspaper report gave to the difference between the 3 guineas paid by to the doctor and the 21 guineas which he paid company, the latter sum covered several atten

The company does not seem to have made a appearance in reply to the complaints, th represented that, if necessary, it could produce 30 persons who could testify to the benefit the treatment in question The decision of the suggests the opinion that the Marylebone ratories were promising more than they could rm In addition to London and other large s, the counties of Surrey, Essex, and (since last Middlesex have now obtained control, by tem of licensing, of "massage and special treat- establishments." Sufficient experience may have been accumulated for a decision to apply system of control, at present secured by local ition, to all populous centres by a general te

Reward for Chivalry

Haynes *v* Harwood and Son the Court of Appeal affirmed the right of a policeman to recover ges for injuries suffered by him in attempting scue another person who had been placed in ngerous position by the defendant's negligence THE LANCET, May 5th, 1934, p 973) The defence was the unchivalrous rejoinder to the man "you needn't have run the risk" The has a maxim *volenti non fit injuria*—no legal of action is raised by the conduct of a man voluntarily exposes himself to danger The man had been standing by the window of the station, he had been aware of a commotion e street, he rushed out, pushed a woman out rm's way and stopped a runaway vehicle At rial the policeman said he had an official duty to ct the public and control traffic In the Court ppeal the case seems to have been put on the grounds of a moral duty Lord Justice Roche a man may recover damages if he is injured in tempted rescue when moved by duty *legal or* and not acting from any choice such as is ved in a consent to take risks Lord Justice ham said the plaintiff could recover if he had under such moral compulsion as, having regard s powers and opportunities, would make him disgraced if he stood by and did nothing The ion seems to be moving away from the standard onduct of the ordinary man (which a jury is osed to be capable of assessing) towards the tial heights of self sacrifice to which a particular is capable of rising Lord Justice Greer thought plaintiff could recover in the circumstances, rinciple being all the more applicable when the er is a policeman who might be expected to as he did We may thus, it seems take into int the relative courage of a particular vocation ofession

Unauthorised Republication of Medical Article

libel action brought by Dr David Nabarro, tor of the pathological department of the ital for Sick Children, Great Ormond street settled last week on payment of an agreed sum amages and costs by the defendants, Virtue and Ltd The defendants, who are publishers ed a year ago a book called The Milk Trade Dairy Industry" It included a chapter headed dulated Milk purporting to have been written r Nabarro and Mr J O Hickman a barrister chapter was a truncated version of an article these two authors which had appeared in LANCET three and a half years earlier Dr Nabarro lained that Virtue and Co had no authority ublish the chapter or to use his name His el explained that the use of the plaintiff's name trade book on a technical subject was likely to im harm in his profession by conveying the impression that he was ready to disobey the rules of the General Medical Council as to advertising Dr Nabarro had an additional reason for objecting to republication of his earlier work inasmuch as the investigation of the subject had made great progress in the past few years and the article was consequently not an up-to-date statement The defendant company explained that it had been mistakenly assumed that the editor of the book (who was now dead) had secured all necessary consents The company tendered its apologies and the case, with the judge's approval, thus came to an end

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BELGIUM

(*FROM A CORRESPONDENT*)

OPENING OF THE ACADEMIC YEAR

THE Belgian Universities have resumed work, in depressing circumstances in one respect, for at the inaugural meetings of the academic year the rectors of the various faculties forcibly commented on the decline of the intellectual standards among the students, producing disappointing results at the examinations M Ladeuze the greatly esteemed rector of Louvain University, probed the causes *of the evil and stated with impressive power and clarity* his *opinion on this question, and his apprecia tion of the actual student population of the universities He said that for the last 20 years* material pre occupation had concurred in causing the university student to concentrate all his energies upon obtaining a diploma which would enable him to enter professional life as soon as possible "The young people seek this goal and seek it pressingly, with little consideration for *science*," said the rector, and added that at a university the general aim of the student should be to acquire not so much specialised knowledge as the ability of maintaining himself by personal effort on a level with the intellectual activity of his epoch M Ladeuze spoke forcibly thus to his young audience "You have not the *pride of your calling* Seated at the table of *science, you have no appetite! You study reluctantly, you drag a burden with you instead of putting your heart into your tasks! You are pre occupied with learning, not with understanding* You have *no desire of knowledge of perception and of clear perception* You are utilitarians You are *content* with the mere cellular activity of your intellect . If you carry no more away from the university than the intellectual baggage which you have 'unpacked' for the examinations what will you do, young doctors, in ten years' time when the science of 1934 will have been left behind, out dated? You will have become old in the medical routine incapable of sustaining the competition of the young coming generation"

A MEDICAL COUNCIL

The Belgian doctors have for several years aimed at the creation of a 'Medical Council' which taking its inspiration from the general principles governing our Council of the Bar would constitute a sort of honorary tribunal before which would be examined and judged professional actions which did not conform with a clearly defined code of professional honesty and dignity In spite of much effort however the scheme whose realisation is desired by the medical profession has not obtained the recognition of law But this is pending and voting on the measure to deal with "medico-pharmaceutical quackery," should reveal how useful a Medical Council could be Quackery is defined here as "the exploitation of public credulity in the treatment of illness," and effective legislation would mean the end of the advertised cures of numerous affections, notably tuberculosis and genito-urinary conditions English legislation has given us a lead in this matter. In Belgium, any advertisement is permissible, whereas the first article of the new measure reads "From the date of promulgation of the present Act all publications made through the medium of the non-medical press, by posters or other means, in favour of medical treatments or of pharmaceutical preparations are forbidden"

The following gives some idea of the need of severe regulations in this matter. In an important Belgian town, a group of doctors, under the guidance of a "manager," have devised the following system of attracting prospective clients The "manager" prints cards giving the names and addresses of the doctors affiliated, and their hours of consultation . . . and these cards are placed with all the tradesmen of the district, provided that they consent to subscribe to a paper published by the "manager" The tradesman, at the time of any transaction at his establishment, presents one of the cards to the customer as a bonus The advantage to the customer is that, on presentation of such cards to any one of them, the affiliated doctors consent to a reduction of from 15 per cent to 40 per cent on their fees. The system is a deplorable invention, and it would seem that, even without any Medical Council and without any law on dealing with quackery, such proceedings should be resisted by professional opinion and the use of the boycott, anyhow, a strong argument for an authoritative tribunal on ethical matters is furnished

LISTER HOUSE

A HALL OF RESIDENCE FOR THE MANCHESTER MEDICAL SCHOOL

AN important change was introduced into the curriculum of the Manchester medical school when the hostel in Nelson-street, separated only by a road's width from the Royal Infirmary, was opened last month A previous Lister House had existed, of which the building belonged to the Royal Infirmary, and the management was directed by a voluntary committee on which the late Mr. G. A Wright, professor of surgery, and Bishop Welldon played a large part At one time Prof F E Tylecote was warden of this hostel But it did not survive the hard times of the war

The present building, formerly known as Nelson House, has had many vicissitudes. It was originally a private house; then, with large extensions, it was a well-known nursing-home under Miss Stewart; next it became the Manchester and District Radium Institute, and now it has, at a cost of not less than £9000, been bought and fitted up by the University for its present purpose The work has been done largely on the initiative of Profs Stopford and Telford, of Miss Crump, the adviser to women students, of Mr. Robert McDougall, and of Major Godlee, himself a collateral descendant of Lord Lister. Mr H T. Simmons, F R C S, is acting as warden and Mrs. Mann as housekeeper.

The house will hold 27 residents, of whom it is expected about 20 will be students taking their medical course, and the remainder qualified men of the demonstrator class. Probably some beds will be available for visitors attending conferences At present the cost of residence and board is £ a week It is confidently hoped that, wh results of the year's work are seen, this amou be substantially reduced. Each resident o bed-sitting room with hot and cold water a central heating; a gas-fire can be used on payment.

For the present year residence is optio students, but in the next academic year all men and women, studying for their final must spend three months in residence. This will fall into the last term of their fifth year one of the first two terms of their sixth and year. A rota of accident and O.P. duties ha worked out for each student On one day h be present in the accident room from 9 a 1 P M., the next day he will be on call for cases for the same hours, and on the third will be free. In the following three days repeated except that his attendance is from In addition, he has his days of attendance out-patient department for minor operatio fractures Arrangements are also made for th of students to medical and surgical cases of interest which are admitted during the night

The advantages of corporate life are often in medical schools where the majority of the live in their own homes or in lodgings, and it that this hostel will bring Manchester medical more closely into friendly contact Owing kindness of Prof Raper the new hall is fort possessing an autographed photograph of Lister, and, through Major Godlee, a silver presented to Lister when he was made regius

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK NOV. 3RD, 1934

Notifications.—The following cases of in disease were notified during the week. Small scarlet fever, 3491; diphtheria, 1640, enter 32; acute pneumonia (primary or influenzal puerperal fever, 42; puerperal pyrexia, 93; spinal fever, 10, acute poliomyelitis, 22; polio-encephalitis, 4; encephalitis letharg dysentery, 8; ophthalmia neonatorum, 76 of cholera, plague, or typhus fever was notified the week.

The number of cases in the Infectious Hospitals of the County Council on Nov 12th–13th was as follows 0, scarlet fever, 1990, diphtheria, 1960, meas whooping-cough, 170, puerperal fever, 23 mothers babies), encephalitis lethargica, 267, poliomyelitis, 11, diseases," 284 At St Margaret's Hospital there were (plus 9 mothers) with ophthalmia neonatorum

Deaths.—In 121 great towns, including there was no death from small-pox or enteric 3 (1) from measles, 6 (2) from scarlet fever from whooping-cough, 41 (13) from diphtheria from diarrhœa and enteritis under two years, and from influenza The figures in parentheses are for London itself.

Deaths from diphtheria were widely distributed, eac following towns reporting 2 deaths—viz, Dagenham, head, Dewsbury, Warrington, and Derby Coventry deaths from influenza

The number of stillbirths notified during the was 261 (corresponding to a rate of 44 p total births), including 37 in London

ROYAL PORTSMOUTH HOSPITAL.—Lady Ramsay has opened an extension to this including three new wards, an additional operatin and a pathological department The extensions approximately £80,000 and were made as the giving of the people of Portsmouth for the recove King The fund was opened by a gift of £40, the late Sir Woolmer White

CORRESPONDENCE

COLLES'S FRACTURE

To the Editor of THE LANCET

,—Mr Niblock criticises my suggestion that s splint is unsatisfactory in the treatment of 's fracture. May I first say that unless he s with me that the only essentials in fracture nent are reduction, adequate and sufficiently aged immobilisation, and active functional *ments*, he will *never* adopt the posterior plaster od to the exclusion of others If however oes believe in these principles (which after all d in importance any detail or side issue), he n fairness admit that a well-moulded plaster better immobilisation than the best Carr's and yet allows active finger movements e occupation of the palm of the hand by the bar rr's splint is a serious handicap to any patient is honestly attempting active functional move-s With a plaster applied the bank clerk the -wife, the typist, and the physician can resume occupation *immediately* Would this be possible Carr's splint? Let Mr Niblock imagine himself ssing a chest with Carr's splint *applied to his* ndins should he have the misfortune to suffer lles's fracture, with a plaster applied this ination could be made with ease.

o not wish to imply that I condemn surgeons who y the Carr's splint I was conversant with the able report of Mr Edwards and Mr Bellis on on 321 cases of Colles's fracture treated at s College Hospital I was only stating in my that after using Carr's splint I was extremely pointed with the results in some cases these es however I attribute far more to the use of ge (in which I believed at that time) than to aulty splintage I then found by personal ience of many of these cases that my results the plaster case, used in conjunction with diate active functional use of the hand were ntly more satisfactory than when I used Carr's or anterior and posterior splints

Niblock points out that I talk of the patient masculine gender The principles of treatment e same when applied to males or females young l Indeed I often find that the result in the y female is better than in younger subjects because it is easier to gain her confidence ecause she is delighted to know that her injury not interfere with her household duties Whereas ung male is bidden to put on his own coat and his own cigarette, she is exhorted to put on n hat and pour out her own tea, there is little nce in the method of psychological approach two cases

I am, Sir, yours faithfully,

A. L. D'ABREU,
Assistant in the Surgical Unit, Welsh National
School of Medicine, Cardiff
12th

ULCERATION FOLLOWING GASTRO-ENTEROSTOMY

To the Editor of THE LANCET

—Mr Smyth's note in your issue of last week, ich he describes the recurrence of a duodenal ix years after gastro-enterostomy prompts me ord a yet more striking example of ulceration ing this operation The patient a man of 31, perated upon 11 years ago by my colleague ohn Everidge who performed a posterior gastro-stomy for a chronic duodenal ulcer The operation was completely successful, and the patient remained entirely free from pain until two months ago He then started attacks of pain two hours after food, and situated to the left of the midline There was also some pain in the back near the midline Gastro-jejunal ulceration was suspected The X ray however, shows the gastro-enterostomy stoma to be working well very little of the barium passing through the pylorus On the lesser curvature of the stomach proximal to the gastro-enterostomy stoma is a large crater, typical of a peptic ulcer of the stomach Occult blood is present, and the gastric residuum shows a low normal acidity

I am, Sir, yours faithfully,

HAROLD C EDWARDS

Queen Anne street W , Nov 12th

THE TREATMENT OF DEAFNESS

To the Editor of THE LANCET

SIR,—The lucid article by Mr Watkyn Thomas in your last issue on the treatment of deafness is an instructive but partial summary evidently written from the standpoint of the hospital surgeon May I be allowed to make one or two remarks The onset of deafness is usually laid in childhood The work of Dr Crowden in introducing into the elementary schools the routine testing of hearing by the audiometer marks a great step forward, and this work has been extended by Mr Cowan's picture frame for easily testing the hearing of young children of 4 years of age The subjects of defective hearing can now be detected, sent to a clinic examined, and treated In young children one of the most frequent antecedents of middle-ear catarrh or middle-ear suppuration is congestive rhinitis For this condition the method of treatment called diastolisation devised by Dr Gautier, of Paris is effective and is easily applied The nasal airway is restored the collection of mucus at the posterior part of the nose can be expelled by the patient, the inflammation of the adenoid tissue in the nasopharynx diminishes and the obstruction of the Eustachian tube is relieved The trouble can be treated soon after the time of onset If detection and treatment are deferred till the child is in an upper class the changes in the tissues of the middle ear are more consolidated treatment is longer, and the results less satisfactory than in the early years The deaf child becomes the deaf adult The time to treat the majority of deaf adults is in *their childhood*

Mr Watkyn Thomas is dubious about zinc ionisation, and I should like to help people to make up their minds about the economic sphere of this treatment in chronic otorrhoea Zinc ionisation is a method of treating sepsis on the surface of the body or on the surface of one of the cavities such as the middle ear When chronic otorrhoea is due solely to sepsis on the surface and when that surface is accessible zinc ionisation is a successful method of treatment For inaccessible areas such as the mastoid cells or the recesses of the attic it cannot of course be recommended There are degrees of severity in chronic otorrhoea due to sepsis in the tympanum On the one hand there is the case in which the discharge is slight and there is little inflammation of the tissues Here mechanical cleansing and insufflation of boracic acid is usually effective On the other hand there are the cases with swollen and hyperaemic tissues and a considerable quantity of mucopurulent discharge which have [illegible] ordinary treatment for months These can be quickly cured by zinc ionisation, many being quite dry after one treatment It is hardly necessary to draw attention to those other cases in which polypi or large granulations are present These are factors additional to sepsis, keeping up the otorrhœa, and should be removed before zinc ionisation is applied.

The severe cases in which the affected area is accessible form the "economic" sphere of zinc ionisation in chronic otorrhœa For more rapid progress to be possible in clinical research into the problems connected with the ear it is necessary to clear away the large numbers of cases of chronic otorrhœa and chronic middle-ear catarrh Zinc ionisation is a help in this direction

I am, Sir, yours faithfully,
A R. **Friel**, M.D , F.R.C S I
Devonshire-place, W , Nov 10th.

RELATIONSHIP BETWEEN HUMAN AND ANIMAL DISEASES

To the Editor of THE LANCET

SIR,—In your admirable leading article of Nov 10th —for which I should like to thank you in the name of the veterinary profession—you mention that the shortage of qualified men in the veterinary profession in this country at the present time is ominous I am glad to be able to assure you that the shortage is likely to be but temporary The number of admissions to the profession is steadily rising, and during the present year will probably be 25 per cent. higher than in 1933 The number of students in training at the five veterinary colleges is the highest ever recorded, and is sufficient to provide a graduation figure for the next five years double that of losses by death or otherwise

I am, Sir, yours faithfully,
Fred Bullock,
Secretary, Royal College of Veterinary Surgeons.
Red Lion-square, London, W C , Nov. 12th

CÆSALPINUS AND HARVEY

To the Editor of THE LANCET

SIR,—There is an apparent error in the translation of the manuscript of Harvey's lectures. The absence of the name of Cæsalpinus from the writings of William Harvey has often been remarked on In Italy some writers even yet regard Cæsalpinus as the discoverer of the circulation As I dealt fully with this controversy in the *Edinburgh Medical Journal*, August, 1911, and in the Proceedings, Section of History of Medicine, International Congress of Medicine, 1913, I shall not again traverse the same ground.

But within the last few months I have come across what looks like a reference to Cæsalpinus in the translation of the MS. notes of Harvey's lectures edited by a committee of the College of Physicians in 1886 (Prelectiones Anatomiæ Universalis, by William Harvey. London · J. and A Churchill, 1886, p 75) It will be remembered that in this scholarly work, the Latin facsimile is on the left-hand page and the English translation on the right. It should be understood that in some places Harvey's execrable handwriting is wellnigh undecipherable The line in question (fifth from bottom of page 75) consisting of three words is rendered and expanded into, "J. Cæsalpinus Aretinus"

In criticism of this version, may I say in the first place that the Christian name of Cæsalpinus of Arezzo was *Andreas*, so that had this eminent naturalist been intended, the initial letter would have been A. Now Harvey is not in the least likely to have written a "J" for an "A," and "J" is the most distinct letter in an otherwise indistinct line. I suggest that the line as Harvey wrote it was for J. Cæs. Arantius, the short for Jul *Arantius, the well-known* anatomist at (1530–1589), whom Harvey twice referred sequently in his essay on the Placenta (W William Harvey, tr by Robert Willis Society, 1847, p. 565). In this passage Har discussing the relations of the umbilical to the vessels on which Arantius had written.

Finally, that this is the correct reading is more probable by the context itself in which is describing the three semilunar valves at of the *aorta* and pulmonary artery, resp for it is on the cusps of these very valves th minute corpora Arantii are found.

I am, Sir, yours faithfully,
D. F. **Fraser-Harris**, M.D , D Sc ,
Chiswick, W.4, Nov. 2nd

SILICOSIS AND MALIGNANT

To the Editor of THE LANCET

SIR,—Prof J H. Dible's interesting issue of Nov. 3rd (p. 982), recording one leukæmia and three of carcinoma in a 14 necropsies on patients dying with silicosis Lancashire since 1930, affords clear evidence connexion between silicosis and cancer In the cases double primary carcinomas were lung and colon in one case, in the other bile-d prostate The third case had a carcinoma lung only.

What is the nature of the link between th tion of silica dust and the supervention of disease? Prof. Dible draws attention to the bility of silica and appears to suggest that as a diffusible carcinogenic agent, but the dominant incidence upon the lungs, and the rence in one case of a primary bile-duct in an area of liver adjoining and adherent to cerous silicotic lung, clearly suggest a local In Case 2 the subhepatic lumbar and iliac showed silicotic changes In Case 3 the glands showed silicotic and tuberculous and the upper abdominal glands silicotic Case 4 the subhepatic and lumbar glands silicotic Thus there is clear evidence that cases silica was taken up by the lymphatics

It has lately been shown by Prof C K D of Harvard, and his co-worker Miss Madeleine (Lymphatics, Lymph and Tissue Fluid, 1933) that chronic lymphatic obstruction produced in animals by repeated injections of sions of silica into the lymphatic trunks cancer appears therefore to be an illustration fact, for such I believe it to be, that any agent can set up areas of chronic lymphatic ob in the body is a carcinogenic agent The silicotic cancer offer strong support to the stasis theory of cancer and are very dif reconcile with the view that the disease is d specific virus or to a specific chemical compo

It is not easy to obtain a hearing for view run counter to a prevalent trend of thought am convinced that further progress in our ledge of the origins of cancer depends upon study of the lymphatic system Patholog left the "morphological plane" of inve prematurely and will have to retrace their ste

I am, Sir, yours faithfully,
W. **Sampson Han**
Harley-street, W , Nov 7th

CHEMICALLY BLEACHED FLOUR

To the Editor of THE LANCET

—Because of the rapid strides of biochemistry ime our Government began to realise that the bing of flour is becoming a serious danger to ealth of the people *I would observe that it is* or more than half a century has been, decreed Statute Book "that no person shall sell to the dice of the purchaser any article of food which of the nature and not of the substance and not quality demanded by the purchaser," and yet overnment makes no attempt to make this candidly and honestly operative and effective tting up legal standards for foods, but even ts and countenances the flour used commercially lomestically to be bleached by any one of the ing four powerful chemical reagents—benzoyl ide, nitrogen trichloride, nitrogen peroxide, and ne—regardless of the prejudicial influences the cts of these bleachers exert upon the flour and ge the metabolic processes in our bodies when and other foodstuffs made of that flour are ed and assimilated When the bleacher used zoyl peroxide, benzoic acid and/or derivatives at acid are produced and remain in the flour, when introduced into our bodies by our staple of food, bread, or any other foodstuff, the tant amino acid glycocoll in the cells of the is tissues of our bodies is attacked, and is not rendered useless but becomes biochemically ous —I am Sir, yours faithfully,

JAMES OLIVER, M D, F R S Edin

ey street, W, Nov 11th

HE MINISTER OF HEALTH AS JUDGE

To the Editor of THE LANCET

—From the conclusion of the leading article ir issue of Oct 27th under this heading it would r that you think that the grounds on which arrow North Ward (Number 1) Clearance Order quashed, were more of a technical than a sub- al nature. There are some facts in connexion he case (many of which have not been mentioned newspaper reports, but which are substantiated cuments admitted to be correct) which show that owners had substantial as well as technical ds of complaint against the Ministry

the public inquiry the medical officer of health arrow admitted that most of the houses would tisfactory if certain repairs and improvements done and these the owners at the inquiry agreed The barrister who represented the council inquiry said that, on the evidence he could ask for confirmation of the order as to all the Yet the order was ultimately confirmed as the houses

erwards the inspector who held the inquiry instructions of the Ministry, asked the owners the medical officer to draw up lists of the litioning which would be satisfactory to the al officer This was done and the lists were l by the medical officer as to most of the houses ent to the Ministry

a meeting held shortly afterwards without to the owners, between one of the Ministry ls and the acting town clerk the medical and the borough engineer (the last of whom not give evidence at the inquiry) the Ministry l told the council officials that most of the s in the area could be made fit for 15 or 20 years. at, if any owner would not agree to do reasonable repairs, the Ministry would confirm the order as to his houses, thereby implying that he would not confirm the order as to the other houses In this connexion we may say that the owners were not asked to do any other repairs than those they had already agreed to do

The council, however, refused to allow their officials to negotiate further with the owners and pressed the Ministry to confirm the order, and, after further letters and meetings between the Ministry and the council and their officials without notice to the owners, the order was confirmed as to all the houses

It is clear that up to the time of the meeting between the Ministry and the council officials, the Ministry thought that the houses could be reconditioned and intended to allow the owners to recondition them, and only changed their minds after pressure was put on them by the council The owners had every reason to think, not only that they had not been given a fair hearing, but also that, though the Ministry wished to allow the houses to be reconditioned, they had yielded to pressure from the council, and were unjustly depriving the owners of their houses without compensation

The decision in the Jarrow case appears to me to be valuable not only in deciding that both parties must be given a fair hearing, but also in showing the difficult, if not impossible position in which the Minister is placed by the Housing Acts When an amending Act is passed it would be much more satisfactory if the duty of confirming compulsory purchase and clearance orders were given to an independent tribunal

The Jarrow order was confirmed about ten months after the public inquiry—an independent tribunal could act as quickly as that

I am, Sir, yours faithfully

JOHN A LIVINGSTON

2, Grosvenor place Newcastle upon Tyne Nov 8th.

THE DETECTION OF THYROTOXICOSIS

To the Editor of THE LANCET

SIR,—In recent references to this question the omission of any mention of the adrenaline test is, I think, to be regretted In your last issue Dr J D Robertson draws attention to what appears to be both a scientific and accurate method of ascertaining the presence of "masked [illegible]" or incipient thyrotoxicosis This requires however several determinations of the basal metabolic rate over an interval of 8 to 14 days during which iodine is administered to the suspect case.

Dependent upon the fact that in thyrotoxicosis the sympathetic nervous system is hypersensitive to adrenaline we have a useful test for incipient thyrotoxicosis in the [illegible] response to a subcutaneous adrenaline injection. This test which is easily carried out and produces a result [illegible] was described by Goetsch in 1918 and [illegible] later in a [illegible] I again drew [illegible] to it in THE LANCET (1923, ii, 973) [illegible] tables [illegible] showing the results in [illegible] dysfunction [illegible] the [illegible] applied [illegible] who kindly [illegible] undergo [illegible]

[illegible] of thyro[illegible] [illegible] stimulation [illegible] picture in a [illegible] appear [illegible] the presence of thyrotoxicosis, and in practice I have found that this is so, and that although not infallible the adrenaline test is a valuable aid to the recognition of these cases —I am, Sir, yours faithfully,

LAMBERT ROGERS

Surgical Unit, Welsh National School of Medicine,
Cardiff, Nov 12th

BACTERIOLOGICAL TESTING OF MILK

To the Editor of THE LANCET

SIR,—In your last issue Dr Howell, medical officer of health for Hammersmith, has drawn attention to the great variation in the laboratory reports he has received on samples of milk submitted for bacteriological examination. I am sure he has not overstated the difficulties, administrative and otherwise, of the present situation. It may interest your readers to learn that three years ago, with the aid of grants from the Empire Marketing Board and from the Ministry of Health, an investigation was commenced in this school into the technique of the bacteriological examination of milk. Prof G S Wilson has been in charge of the work and has had the advice of a strong consultative committee consisting of members appointed by the Ministry of Health, the Ministry of Agriculture and Fisheries, the Department of Health for Scotland, the National Institute for Research in Dairying, the Society of Medical Officers of Health, and the London School of Hygiene and Tropical Medicine It is expected that a full report on the results of the investigation will be published about the middle of next year

I am, Sir, yours faithfully,

W W. JAMESON.

London School of Hygiene and Tropical Medicine,
Keppel-street, W C., Nov 13th

CURARA IN TETANUS

To the Editor of THE LANCET

SIR,—In his very interesting paper in your last issue on the treatment of tetanus Prof Florey quotes me as saying that small doses of curara abolished rigidity in a case of tetanus for periods up to 48 hours. This is not quite correct In describing my first case I stated that "within two hours of starting this treatment the spasms were less severe, the rigidity of the arms and abdomen was less, and the spasm of the masseters was less, so that feeding was made a good deal easier. The patient had less pain and was more comfortable" In the second and more severe case, in which relatively much larger doses of curara were used, the spasms and reflex excitability were almost completely controlled, and the rigidity made very much less for six hours, without causing paralysis of the voluntary or respiratory muscles Before the injections spasms were almost continuous, the mere sight of water or attempt to drink increased their severity to an intense degree, but 20 minutes after the injections had been begun, the patient could drink and swallow without bringing on spasms There was some weakness of voluntary muscles but no appreciable paralysis

The fact that Prof Florey, in contrast to the above, detected no evident effects on rigidity or spasms unless doses sufficient to cause appreciable paralysis were used, can probably be explained as he suggests by the fact that he was using curarine and I was using crude curara Hartridge and West have shown that two out of seven specimens of curara which they tested possessed the power of removing tetany in the dog without causing paralysis, and suggest that some samples contain a rigidity-reducing or "lissive" agent which is absent in others Dr West very kindly tested the sample which I have used in treating these patients and classed it as moderately "lissive" The possible pharmacological imp of curara with this selective action has been me by West.

In treating tetanus it is clear that a drug wi the power of controlling spasms and rigidity w causing severe paralysis would be safer than o a marked paralytic action, and for this rea samples of crude curara or its derivatives oth curarine may prove superior to curarine itself.

Lastly, I think it is important to remem the actions of this group of drugs may be diffe the rabbit and in man —I am, Sir, yours faith

Cambridge, Nov 13th. LESLIE C

TREATMENT OF EXOPHTHALMIC
WITH DEEP X RAY THERAP

To the Editor of THE LANCET

SIR,—We regret that, during the illness of us (W. L W.), through a clerical error some values for the basal metabolism before were inserted in Table I. of our paper LANCET, Sept 8th, p 535). All the values le 1 per cent. should be deleted. The correct are *Case 2*, unknown ; *Case 3*, +50, *Case 12*, Case 14, +40, Case 17, +18; Case 20, unk

We are, Sir, yours faithfully,

E P Pou

Oct 31st W L Wat

A SUPRARENAL TUMOUR

A CHARACTERISTIC case of paraganglioma, by J. Bauer and R. Leriche (Wien. klin Oct. 12th, 1934, p. 1224), may be added to mentioned in our issue of Sept. 29th (p 714).

The patient, a man aged 40, was first seen in Ma He had been perfectly well until April, 1932, began to suffer from attacks on rising of "puls the eyeballs" Gradually these attacks becam frequent and ultimately occurred with regular morning, usually on rising but sometimes on ing (On one occasion there was an attack afternoon) At the same time they increased in When fully developed, they began with a fe *epigastric discomfort, nausea, and anxiety*, the extremities became cold and very pale, there was tion with a feeling of pulsation in the eyeballs, and tremor of the fingers. The attack lasted and for the next few hours the patient felt co exhausted, but later regained his usual feeling of

He was admitted to hospital and the attacks observed They were found to coincide with a systolic pressure, the diastolic pressure remaining st or falling slightly The pulse-rate remained con fell a little There was hyperglycæmia, which in the attacks reached a very high level Between th the blood pressure was $\frac{160\text{–}170}{115\text{–}120}$, the urine trace of albumin and a very few granular cast *function was normal*

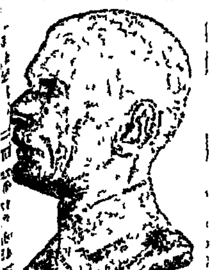
A diagnosis of paraganglioma was made, Sept 25th, 1933, in the absence of any loc indications, the right side was explored abnormal was found, and as an attack deve this point operation on the other side was po The patient, however, refused further operatio left the hospital. The attacks continuing, he his mind, and was readmitted in December, On exploration of the left kidney region a tum size of a cherry was found close to the sup gland It was encapsulated, was readily re and consisted of typical paragangliomato The patient had no further attacks. Exam May, 1934, the blood pressure was $\frac{165\text{–}1}{11}$ urinary findings were unchanged, the blood s normal, and the only complaint was of a fe great fatigue after walking

OBITUARY

AILEY KELLY ASHFORD, C M G (Hon), M D , D Sc

e have received from Colonel Clayton Lane following memoir of Colonel Ashford, well n in connexion with his discovery of the worm in Porto Rico and of the primary place it held in causing there the notorious anæmia e jibaro

n the death of Colonel Bailey Kelly Ashford e age of 61 tropical medicine and the American have lost an able and distinguished personality as proud to have come of Devon stock on both his father's ancestors having reached Virginia and his mother's Tennessee from Kelleigh 300, ago His father, professor of surgery in etown (and called in too late after President ld was shot) died when Bailey Ashford was less 10 years old, but it was the powerful personality of the father which determined his son to medicine He selected the army, and in passing into the Army Medical School tied for the first place while in passing out he and his yolk fellow tied for the last The Spanish American war coming shortly took him to Porto Rico where his real life work was to be There he met and married Maria Asuncion Lopez, daughter of the Marques de Villar, by whom he had a son and two daughters



COLONEL ASHFORD

(From a bust by M D [illegible]

ford was at Ponce when, in 1899, the hurricane struck it and left the army ccour for nearly a year 800,000 persons as the presence in his hospital wards of wretched pallid refugees, who would not r when well fed, which led him to the ery, first of eosinophilia in the blood and after of hookworm eggs in the fæces which had ingly been searched, and which brought it that on Nov 24th he sent to his senior a am that may be called famous announcing that use of Porto Rican anæmia had at last been sed It was held as a supreme jest by the ted islanders that a young Anglo Saxon should me that the local anæmia was due to a worm, s discovery directed the course of his future life the United States to which his duty had taken ack, he escaped transfer to the Philippines by tack of diphtheria, and was afterwards sent to Ponce at his own request there to try to mething for the anæmic jibaro of Porto Rico diciously injudicious writings he obtained the ointment of the well known Anæmia Commission himself as head, and was able before being helmed by an influx of patients to prove his so that through him the United States army its first contribution to the health of the nation's acquired island; and that a notable one, for it was estimated that the efficiency of labour had been increased by 61 per cent., while in seven years the deaths from anæmia fell from 11,875 to 1758

"It was in 1906 that Ashford conceived the idea of a school of tropical medicine and hygiene for Porto Rico under the auspices of some university in the United States, but it was not till 1912 that an Institute of Tropical Medicine and Hygiene came into being there, and not till 1926 that a school was founded under the auspices of the Columbia University, New York, with himself as professor of medicine and of mycology His later scientific work was concerned largely with the connexion between monilia and sprue, and led him finally to the conclusion that there was but one species of monilia which in temperate climates gained in children—and in the old when weakened by digestive disturbances—a general footing in the alimentary canal, the sore mouth of thrush being merely the visible part of a wide infection, while in the tropics these disturbances caused by nutritional unbalance gave the same monilia its opportunity of ingress, and the two together caused sprue The cure of sprue was, then, in his view essentially dietetic aided by his monilia vaccine

"Responsibilities and honours were his in ample degree In 1910 he was United States delegate to the International Congresses of Industrial Hygiene and of Alimentary Hygiene in Brussels He was member of a Rockefeller Commission to Brazil in 1916 He sailed with the First Division of the American army to France in 1917, was made head of the school for army medical officers at Langres, and later chief surgeon of the Sixth Army Corps, obtaining the D S M and the honorary C M G , he was then transferred to Washington to serve on the general staff and appointed editor in-chief of the U S Medical History of the War He was sent to Cuba to investigate a mysterious epidemic of fever which turned out to be caused by malaria and dengue, and attended as delegate the International Congress at Cairo in 1928, where he received the Grand Cordon of the Order of the Nile and an honorary degree from the University of Egypt Some 200 of his friends attended a testimonial dinner in his honour in New York on June 27th of this year

"Two incidents connected with each of his main contributions to tropical medicine occurred after his last illness struck him They are noteworthy for their illumination of his acumen and determination The first was his call to an old patient at a time when his own pain was already sufficiently severe to have allowed many a man to excuse himself, his brilliant diagnosis of ankylostomiasis while still in the latent stage, and his subsequent collection of a mass of data which formed the basis of the paper in which after 20 years he made his valuable come back to the study of hookworm infection As to the second, he tells in his autobiography[1] how a month before the last Pan American Congress a terribly debilitated and anæmic sufferer from sprue was carried into his consulting room, how he treated him in hospital and sent him home for three weeks having received his promise to return the day before the Congress and how the man kept his appointment, almost unrecognisable in his improvement, and with Ashford's son Mahlon carried his feeble doctor in his chair up the hundred steps to the Congress Hall

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[1] A Soldier in Science [illegible]

"Ashford's own words fittingly conclude this note: 'So at the end we see clearly the relation of clinical to scientific medicine. One can no longer exist without the other. The best scientists in medicine are, or should be, clinicians. All the work on hookworm disease in Puerto Rico has been done in this way. From the patient has come the problem. From science has come the solution. The two are inseparable.'"

GEORGE ADKINS, L.R.C.P.Lond., M.R.C.S.Eng., D.P.H. Camb.

Dr. George Adkins, who died on Oct. 31st in the 74th year of his age, was the son of a Yealmpton doctor and received his medical training at the London Hospital. He graduated in 1882 with the English double diploma, and after holding various resident appointments, settled at Yealmpton, where his father had been a doctor. In 1886 he took the D.P.H. at Cambridge and was later appointed M.O.H. to Plympton St. Mary Rural District. He now removed to Paignton where he was on the staff of the local hospital, and served as doctor in the South African war. During his service he contracted typhoid fever but made a good recovery and for a period practised in the Isle of Wight, until in 1908 he was appointed county medical officer of health for Devonshire. Here he did signal work in the cause of public health. The county was without an organised medical service and its geographical formation did not lend itself readily to a coördinate scheme. Adkins saw that he must begin slowly and work systematically, and he turned at first to the problems of a tuberculosis service and a school medical service. His work soon bore fruit and the county now possesses a definite and orderly scheme, both domiciliary and institutional, for the prevention and treatment of tuberculosis, while a school medical service has been suitably staffed. Child welfare work was now taken up with enthusiasm and, as necessarily follows, the attention of the county was acutely drawn to the necessity of improving housing conditions, and here much was done under Adkins's supervision for the betterment of the living conditions of the poorer classes. He instituted a health week which has for some time been annually observed, and on his retirement in 1929 he could look back upon a fine record of achievement.

During the last years of his life Dr. Adkins lived in retirement in Exmouth.

DAVID WOOD INGLIS, M.A. Edin., M.D. Glasg., J.P.

THE death occurred recently of Dr. David Wood Inglis, a veteran Tyneside practitioner. Born in 1854 in Biggar, Lanarkshire, he entered the University of Edinburgh with the intention of becoming a teacher and graduated there as M.A., but, feeling a bent towards medicine, he proceeded to Glasgow where at that time the classes of medical students were less crowded, and graduated as M.B., Ch.B. Glasgow in 1880, proceeding to the M.D. in 1883, acquiring both degrees "with commendation." He then held resident appointments in the Western Infirmary, Glasgow, and the Glasgow Dispensary for Diseases of the Skin, after which he came to Hebburn and remained in practice there to the end of his life, for although he had partially retired three years before his death, he retained his appointment as factory surgeon until the end.

We owe to Prof. Grey Turner the following memoir: "About 50 years ago Dr. David Wood Inglis came to Tyneside and worked in Hebburn to the end of his life. He died in his 81st year after an operat fulminating type of appendicitis. Until th his fatal illness he was active in every way a fortnight before his death was enjoying a end in the country with professional friends, ten mile walk apparently without fatigue.

"Dr. Inglis was a worthy the scholarly type of doctor who was the product of Scottish universities in form He was an excellent practitioner, helpful siderate, and attended to his immediate du conscientiousness and was a regular visit Newcastle Infirmary where it was his watch closely the surgical practice of Prof. Rutherford Morison. He was part interested in his appointment as factory and largely for this reason, when some thr ago he retired from active practice, he that appointment, thus keeping in touch with and for whom he had worked for so He was medical officer and public vacci Hebburn district and South Shields Union, to the Hebburn Accident Infirmary and to t Lead Works, and though holding these man ments and though the exigencies of his pract many, Inglis was never hurried or flustered. a justice of the peace he was regular in atten the courts.

"Beyond his immediate professional du possessed a character whose influence in th things of life was very great. He had a habit of conciliation which made him widely a consistent equanimity, and a never failing humour. His interest in the humanities led devote what time he could spare to the stud ture; he was a good scholar and loved studies and enjoyed wrestling with the which they presented. He read German had at one time travelled considerably a recently his holidays were spent in the island o indeed, till about two years ago he regularly among his beloved Cullins. Inglis will be sad by a large circle of friends and by none more fellow members of the 'Sphalma.'"

DR. WILLIAM HEWSON MOOK

Dr. William Hewson Mook was born in graduated in medicine in 1900 from the Medical College, Missouri. His death took Nov. 3rd from pneumonia and heart failure. be remembered by many medical men who France during the war. He was already a we dermatologist in his own country when he ca with the first American contingent in 1917 attached temporarily to the R.A.M.C., amo he became extremely popular. He subseque the position of chief dermatologist to the Expeditionary Force. After the war he St. Louis to resume his dermatological practi He was the author of many papers on h subject, of which perhaps the best know exhaustive contribution on disseminated erythematosus. His friends in Great Britain with deep regret of his sudden death.

NEW MATERNITY HOSPITAL, EDINBUR board of the Royal Infirmary have decided new maternity hospital is to be built with stone, which will reduce the cost of building Subscriptions to the extension fund at presen of the estimated expenditure by £100,000

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Hospitals and Lotteries

Nov 7th, in committee on the Betting and ies Bill Captain HEILGERS moved a new clause mpt small lotteries organised for the benefit of able objects, provided that the whole proceeds e lottery (after deducting expenses incurred inting and stationery and the provision of , not exceeding one fifth of the proceeds) id to persons specified by the local authority, none of the prizes shall be money and their value less than £300, that the police are ied of the purpose of the lottery, the names promoters, and the *local authority's approval*, ickets are issued only within the area approved e local authority, and that approval shall e given to more than three lotteries in any during a calendar year This new clause had, d, the full support and backing of the British tals Association There was no loophole for pulous promoters No one could suggest that demoralisation would be brought about by penditure of 1s 6*d* or 3s a year

T WILLIAMS said that in his view the enance of our hospitals should be a national and they ought not to have to depend on lotteries ws for support, but he did not see any reason f a hospital adopted the method of a lottery or they should not be allowed to do so The als had declared against big sweepstakes, but ad agreed to adopt draws of the kind proposed new clause, which were purely localised While pported the new clause he would not mind aximum value of prizes being reduced to £200 raws limited to one a year

tain CROOKSHANK (Under-Secretary Home) asked the committee to look at the clause lly The Bill said that lotteries were unlawful two kinds, the small ones connected with and bazaars and those connected with clubs stitutions This was a proposal to introduce d category—*the charitable* Pressure on the authorities from the various charitable organisa- —whatever that might mean, there was no ion—would be such that they would have to between competing interests What standard they take?

tain HEILGERS Has not the system worked well in the case of the King Edward Hospital ?

ptain CROOKSHANK said that had nothing to ith lotteries, it was based on a system of iptions given for the hospitals This new would open the way for bogus charities, which there was plenty of trouble already

HASLAM said he would be satisfied to see the lause confined to hospitals It was supported British Hospitals Association, which comprised r cent of the beds in hospitals It did not le the hospitals in the London area, and he stood that the great London hospitals were not ularly favourable to this scheme of lotteries e was informed that if the Bill as it stood became considerable number of hospitals throughout untry would suffer Why should large sections population be provided with betting facilities ro or three days a week throughout the year hospitals be denied the right to hold one small a year in aid of their funds?

tain HUNTER said that unless the Home ary would give favourable consideration to hing on the lines of this new clause a great of the machinery needed for raising funds for tals and other valuable agencies would be yed.

HANNON supported the clause They wanted hospitals to continue on a voluntary basis and every locality to feel that it was maintaining its own hospitals

Lieut -Colonel ACLAND TROYTE asked what harm could be done to anybody by allowing people to pay sixpence or a shilling as a subscription to the hospitals and, in return, have the chance of winning a small motor car

Mr E WILLIAMS said that the time had come when the House of Commons should realise that hospitals should not be dependent at all on lotteries It was a scandal that speeches should have to be made in the House in support of human institutions such as hospitals

Captain ARCHIBALD RAMSAY said he did not think that the Under-Secretary had given a single intelligent reason for not accepting the new clause

The motion for the second reading of the new clause was negatived by 99 votes to 15

On Nov 12th a new clause was moved by Sir W Wayland providing that a Christmas draw promoted with the consent of the mayor or chairman of council in a city, borough, or district to raise money for a local hospital should not be deemed to be an unlawful lottery

Captain CROOKSHANK said it would be practically impossible to limit the sale of tickets in such a lottery to that district in which it was authorised The great mass of the hospitals, he said did not want money to be raised by lotteries Many of them realised that their willing subscribers would say to them "Why ask me for a subscription, why not have a lottery?" There would be no answer to that question —The clause was rejected by 155 votes to 81

Poor Law Bill

Sir HILTON YOUNG (Minister of Health), in moving the third reading of the Poor Law Bill on Nov 9th, said that the general effect of the measure was to place an obligation on public assistance authorities to disregard the first five shillings of trade union sick pay on the same footing as friendly societies' sick pay, because there was no difference in substance between the two, to impose a similar obligation in respect of maternity benefit, and to disregard the first £1 of a disability pension As to the desirability of these measures the House was in full agreement

Sir FRANCIS FREMANTLE said he would like to express the great appreciation which many of them felt in regard to the exemption of maternity benefit He hoped that this was only the beginning of considerable measures to be taken to improve maternity conditions

The Bill was read the third time and passed

Medical and Surgical Instruments

Dr BURGIN (Parliamentary Secretary to the Board of Trade) moved "That the Additional Import Duties (No 28) Order dated August 23rd 1934, made by the Treasury under the Import Duties Act 1932, be approved" This short Order, he said dealt with the medical and surgical instruments Surgical instruments came under the category of cutlery and tools, although the words seemed perhaps a little inapplicable Cutlery and tools were subject to a 10 per cent duty When the Orders were made about surgical instruments the duty was left at 10 per cent The present Order raised the duty to 20 per cent There was a very large industry in the United Kingdom, the factories were fully equipped with the most modern plant, and the public bodies and voluntary hospitals used almost entirely British made instruments There were imports of standard instruments sold at very low prices The British preference was not to have a surgical instrument standardised and made by mass production at a low price but to have so far as possible a hand forged instrument The committee therefore recommended that there should be a 20 per cent duty on these surgical instruments

Mr. **Morgan Jones** said that if steps were taken which tendered to exclude foreign surgical instruments they were doing something which was perhaps more far-reaching in its effect than the exclusion of other foreign articles Science, and especially the science of medicine, was an international activity and interest If hospitals found, as they clearly must or they would not buy these foreign instruments, that a German instrument was more adaptable for their purpose than an English instrument, was there not something rather more in it, something more valuable to the nation, than the mere passing advantage of pounds, shillings, and pence to British traders? Hospitals ought to be able to have access to the very latest instruments whatever they might be, and wherever they were devised

Dr. **Burgin** said he thought that Mr. Morgan Jones, in dealing with the Order regarding duties on medical and surgical instruments, had misapprehended what he (Dr Burgin) had said He must not relate the large consumption of instruments by hospitals with the importations from abroad He was not saying anything to convey the impression that any part of the foreign instruments went normally into consumption in the British hospitals Where foreign inventions or discoveries were made, the only effect of this Order would be to increase the duty from 10 to 20 per cent. Nobody would believe that an addition of two shillings in the pound would really have the effect of prohibition. They had to do all they could to encourage employment in this country and therefore fairly to balance the interests of the producer and the consumer.

The motion for the approval of the Order was agreed to.

HOUSE OF COMMONS

WEDNESDAY, NOV 7TH

Safety Devices in Passenger Aircraft

Mr **Doran** asked the Under-Secretary of State for Air if his attention had been drawn to the loss of life to air passengers, due to the absence of life-saving devices in passenger aircraft, if he would introduce legislation making it compulsory on all passenger air services to carry safety devices; and if, in order to meet the expense of such installation, he was prepared to grant a subsidy to these services —Sir P. **Sassoon** replied . I am unable to agree with my hon friend that there has been preventable loss of life on passenger air services arising from the absence of life-saving devices The existing regulations require that life-belts must be carried by public transport aircraft on flights at any point of which the aircraft will be more than ten miles from land As at present advised, my noble friend does not consider further regulations on the subject desirable.

Maternal Mortality

Mr **Boothby** asked the Minister of Health whether his attention had been drawn to the list of areas exhibiting a persistently high rate of maternal mortality included by the chief medical officer of the Ministry in his report for 1933; and whether the responsible local authorities in all or any of these areas gave milk or food to expectant and nursing mothers —Mr. **Shakespeare** (Parliamentary Secretary to the Ministry of Health) replied The answer to the first part of the question is in the affirmative The information in my Department shows that of the 125 maternity and child welfare authorities, which function within the areas in question, all but three provide milk or food for expectant and nursing mothers, and in one of these areas any necessary supply is provided by a voluntary society. As my hon friend is aware my right hon friend has recently drawn the attention of all maternity and child welfare authorities to the importance of this provision and he is proposing to take special action on the whole problem in the areas to which he refers.

Earl **Winterton** Is the hon gentleman aware that some of the highest rates of mortality are to be found in some of the richer districts, and for some unexplained reason, among the richer residents in those districts?

Miss **Rathbone** . Will the hon Member inquiry to be made into the economic circum the mothers who die in some of the typically areas?

Mr **Shakespeare** · That matter will no do into account when special investigation is particular area.

Mr. **Boothby** . Will the hon. Member make representations to those authorities who do supplies of milk to expectant and nursing mothers

Mr **Shakespeare** We are doing that already

THURSDAY, NOV 8TH

Dupuytren's Contraction and

Mr **Tinker** asked the Home Secretary if h had been drawn to a number of cases in coal men being incapacitated and unable to foll employment through what was known as D contraction, fingers contracting on to the palm of t and if he would consider having this schedul industrial diseases —Sir J **Gilmour** replied The of giving Workmen's Compensation for D contraction was fully inquired into in 1913 by th mittee on Compensation for Industrial Diseas took evidence from the Miners' Federation and The committee found that there was no connexion between this condition and the employment which would justify its being sc and since then no evidence has come to my suggest that their conclusions ought to be recons

Mr **Tinker** Is the right hon gentleman recently in Lancashire several cases of people from this disease have been brought to our n will he further consider the matter if more brought to his attention?

Sir J **Gilmour** . Certainly, if the hon Mem produce any fresh evidence I will consider it

Supplies of Milk to School-children

Mr **Drewe** asked the Parliamentary Secreta Board of Education whether he could state the amount of milk consumed in the schools since of milk was reduced , and whether there had difficulties in working the scheme

Mr **Hall-Caine** asked the Parliamentary S to the Board of Education if he would state the of children now being supplied with milk at the price of one halfpenny per bottle of one third how many local authorities had taken advantage supply of cheap milk —Mr. **Ramsbotham** repli noble friend regrets that it is not possible to give information regarding the operation of the scheme supply of milk at reduced rates in schools in Eng Wales until the Milk Marketing Board's retu October have been analysed, and this will tak little time With regard to the question asked Drewe, a number of questions, as was inevitab initial stages of a scheme of this magnitude, have but it is hoped that any difficulties presented satisfactorily adjusted at an early date

Mr **Drewe** Can my hon friend say wheth has been any difficulty in getting milk approved medical officers, in the rural areas particularly?

Mr **Ramsbotham** I think not at present

Sir F **Acland** . Is it not on the whole true that the work is difficult and requires the inspection many farms, the staffs of local authorities are to get farms approved so that a supply of milk available to schools at a fairly reasonable rate?

Mr **Ramsbotham** I think that that is so

Mr **Glossop** Is my hon friend aware that parts of the country considerable hardship is bei to small producers who previously supplied view of the fact that the authorities are insist supply not of fresh milk, but of pasteurised can only be supplied by large dairies?

Mr **Ramsbotham** . The Board of Education made it a requirement that pasteurised milk supplied to the exclusion of all other types in the Board's Circular, where the supply of pasteurised milk is available it should be l opinion is strongly in favour of supplying ised milk where possible

cal Officer for Maternity and Child Welfare

Rhys Davies asked the Minister of Health whether aware that the decision not to fill the vacancy out of the resignation of the medical officer for ty and child welfare but to allocate the duties fficer of lower rank, had created a misgiving that t importance was not attached to this part of the ent's activities and whether, in view of the ures of maternal mortality and the necessity for l efficiency in dealing with this problem, he would sider the matter —Sir Hilton Young replied n Member is, I think, under a misapprehension gard to this matter The Local Government 1020 imposed more largely on local authorities ermination of their local administration of maternity ld welfare work, and consequently the detailed sion of this work by my Department has been tually changed in character and degree I therefore that, on the retirement of the senior medical n charge of this work, its supervision could for the est be entrusted, not to two higher posts, but to This post, as I have previously stated, is held by experienced woman medical officer, who is directly ble to the chief medical officer of the Ministry ng as I do the greatest possible importance to this of the work of the Ministry, I am fully satisfied ere is no ground for misgiving as to the present ments for its effective performance

Davies There has been a change in the status erson?

ilton Young No, Sir, there has been no change status at all The status necessary to secure t authority for the work is quite unchanged same as it ever was

Maternal Mortality

Countess of Iveagh asked the Minister of Health his attention had been drawn to the list of areas ng a persistently high rate of maternal mortality l by the chief medical officer of the Ministry in his or 1033, and how many, and which, of the powers ould be exercised by local authorities under the ty and Child Welfare Act were exercised in each areas —Sir Hilton Young replied The answer rst part of the question is in the affirmative The dy will see from the Circular recently issued on ject of maternal mortality that it is intended to detailed review of the maternity services in each areas with a view to determining what action d to render the services both effective and compre and for the purpose of the review I propose to expert medical officers to visit the areas concerned

ialist Medical Advice for Insured Persons

Renville asked the Minister of Health if the ment was now prepared to adopt the report of yal Commission on National Health Insurance d in 1026, and in which they recommended expert advice and treatment for patients who could o meet a specialist, expert advice for persons who unable to travel, and laboratory services Sir Young replied: The recommendation of the ommission was that the services referred to should ided by means of a partial pooling of the surpluses oved societies, a plan which has proved to be cable

Local Authorities and Birth Control

rnold Wilson asked the Minister of Health any institutions had been set up by local authorities purpose of giving advice on contraceptive methods what places —Sir Hilton Young replied So known in my Department clinics at which advice ceptive methods is given subject to the limitations on in Ministry of Health circulars on the matter en provided by 32 local authorities in England ales It is understood that a number of other ies have made arrangements with the same otherwise than by the provision of clinics

Post-vaccinal Encephalitis

Mr Groves asked the Minister of Health whether, as the seven cases of post vaccinal encephalitis investigated in 1933 all occurred within one month of vaccination, he would say if any other cases were reported which developed more than one month after vaccination and, if so, how many, and whether the cases investigated in 1933 recovered completely and, if not what was their present condition of health —Sir Hilton Young replied No cases other than those referred to by the hon Member were reported to me Of those cases one died five recovered completely, and one had recovered by the time of her discharge from hospital except for a slight and probably transient spastic condition of the limbs

Dental Benefit

Sir A Wilson asked the Minister of Health whether and, if so, when the Dental Benefit Joint Committee proposed to issue a fresh edition of the Dental Benefit Handbook of 1927 —Sir Hilton Young replied The Dental Benefit Joint Committee, which was a voluntary non statutory body ceased to exist on Dec 31st 1928 and, subject to my general control, the arrangements for the provision of dental benefit are now in the hands of a statutory body known as the Dental Benefit Council set up in accordance with the Regulations made under Section 16 of the National Health Insurance Act, 1928 These Regulations also contain provisions for the administration of the benefit, including the scale of fees and conditions of service, and they replace the Dental Benefit Handbook which will consequently not be reissued

MONDAY NOV 12TH

Manchester Woman's Death

Mr Rhys Davies asked the Minister of Health whether he was now able to state if the findings consequent upon the inquiry into the death of Mrs Taylor of Manchester, were to be published, and, if so when —Mr Shakespeare (Parliamentary Secretary to the Ministry of Health) replied My right hon friend has received the report in question Publication of it would be contrary to the established practice in such cases He proposes to communicate fully on the matter with the City Council of Manchester, at whose request he caused the inquiry to be made

Asylum Officer's Superannuation

Mr Thorne asked the Minister of Health if he was aware that Miss F M Thomas was employed as a nurse at Whitchurch (Cardiff) Mental Hospital for nearly seven years, during which time she paid £10 in contributions to the superannuation fund that she then worked two years at the Swansea Mental Hospital and afterwards got married, that she received from the Swansea Mental Hospital Committee as returned contributions £7 and that she applied to the Whitchurch (Cardiff) Mental Hospital for the return of her contributions there but this committee had refused to do so, whether he would inquire why the contributions had been refused and what action he intended taking in the matter —Mr Shakespeare replied My right hon friend is not aware of any provision in the Asylums Officers Superannuation Act, 1909 enabling the Cardiff Visiting Committee to return the contributions The visiting committee were informed on the 29th ultimo that if they desire to return the contributions my right hon friend would be prepared to sanction the expense in the exercise of his powers under the Local Government Act 1933

Supply of Milk to School-children

Mr James Duncan asked the Parliamentary Secretary to the Board of Education what difficulties had arisen in the administration of the milk in schools scheme and if they had been satisfactorily settled —Mr Ramsbotham replied The initial stages of the scheme as was perhaps inevitable considering its magnitude have given rise to a number of questions The details however are technical and somewhat involved and could not be dealt with adequately within the limits of question and answer If my hon friend desires [illegible] particular [illegible] and will put down a question I shall be [illegible] to answer him With regard to the [illegible] the question, it is hoped that any difficulties presented will be *satisfactorily adjusted at an early date.*

Mr. JAMES DUNCAN asked the Parliamentary Secretary to the Board of Education how many children in London were now having a daily glass of milk as a result of the new milk-in-schools scheme, and what was the total number of children in London having milk in the schools —Mr. RAMSBOTHAM replied My noble friend understands that, as the result of a special inquiry made by the Local Education Authority for London shortly after the scheme came into force, it was found that about 364,000 children *in their* area were *then receiving milk under* voluntary schemes, and about 26,900 children through the Local Education Authority's arrangements under the Education Act, a total of 390,900 Prior to the introduction of the scheme the corresponding figures were approximately 100,000 children and 25,000 children, a total of 125,000 children.

Mr. JAMES DUNCAN asked the Parliamentary Secretary to the Board of Education if he would make a statement regarding the success of the milk-in-schools scheme — Mr. RAMSBOTHAM replied: My noble friend is afraid that for the next few weeks and until the Milk Marketing Board's returns for October have been analysed it will not be possible to make any detailed statement as to the success of the scheme There is no doubt, however, that it has met with a very encouraging reception and that there has been a very great increase in the amount of milk consumed by the children in schools.

Maternity and Child Welfare

Mr DENMAN asked the Minister of Health whether his attention had been called to the report of the county medical officer for Monmouthshire for 1932, in which it was stated *that* the county *council ordered that* the maternity and child welfare estimates should be reduced by the annual figure of £3260, and that in the following year, 1933–34, a further saving of £637 was required, and that it was necessary therefore to revise the scheme for the provision of milk for necessitous mothers and for infants; and what action he proposed to take in view of the fact that it was noted, both in the 1932 and 1933 reports, that in many of the districts under the county council, mothers were showing evidence of malnutrition —Sir HILTON YOUNG replied The answer to the first part of th is in the *affirmative* *With regard to* the sec I am informed that the county council gave an that the reductions referred to would not pr continued supply of milk to those mothers wh it on grounds of health, but I am making furth as to the present position and will inform my of the result.

The Use of Avertin in Operations

Captain ERSKINE-BOLST asked the Home if he would state the fatalities which had been in the last six months as a result of the use of in operations —Sir HILTON YOUNG replied: The records do not enable deaths attributable to *to be distinguished* from those occurring during though not attributable thereto. For the six ending March 31st last, the deaths classified to, or having occurred during anæsthesia, incl following in which avertin was used: 3—avertin 1—avertin in conjunction with oxygen and oxide; 1—avertin in conjunction with "gas, ox ether."

TUESDAY, NOV 13TH

Grade A (T.T.) Milk for Schools

Mr. RHYS DAVIES asked the Parliamentary to the Board of Education whether he would local education authorities with a view to they should purchase, for use in their schools, supplies of certified and Grade A (TT) milk whether he was aware that a farmer in the Wes Urban District Council's area held a Ministry of licence for the production of Certified and Grade A milk, and would be able to supply all the scho *that area with that milk* —Mr RAMSBOTHAM My noble friend understands that Certified and (T T) milk are outside the scope of the Milk Board's scheme, unless the producer is prepared these varieties as ordinary milk and becomes with the Milk Marketing Board as a producer not propose to circularise local education in the sense suggested. As regards the second the question, my noble friend's attention has drawn to the circumstances mentioned

MEDICAL NEWS

University of Oxford

To-day, Friday, Nov 16th, at 5 P M at the Dunn school of pathology, Dr. E W Ainley Walker, the deputy professor of pathology, will give a lecture on the late Prof Dreyer's scientific work at Oxford.

Dr. B G Maegraith, of Adelaide University and Magdalen College, Oxford, has been elected to the Staines medical fellowship at Exeter College.

University of Cambridge

The following have been appointed examiners —

Second Examination for M B (December, 1934, to December, 1935) —Anatomy. Prof. H A. Harris, Prof J S. B Stopford, F R S, and (if required) Dr W L H Duckworth and Dr. H L H H Green Physiology Dr. F R Winton, Dr E G T Liddell, and (if required) Mr F J W Roughton, Ph D, and Prof. B A. McSwiney Pharmacology Prof E B Verney, Dr. Clifford Hoyle, and (if required) Dr G N. Myers, Prof J A Gunn, Dr G W Theobald, and Dr K J Franklin Pathology Dr E T C Spooner, Prof C C Okell, and (if required) Dr A A Miles, Dr L E H Whitby, Dr H N. Green, and Dr. H. A. Lucas

Third Examination for M B (December, 1934) —Surgery Mr. Geoffrey Keynes, Mr A Tudor Edwards, Mr. J. B Hunter, Mr. E. C. Lindsay, Mr W F Fedden, and (if required) Mr Julian Taylor, Mr W Sampson Handley, Mr W. S Perrin, Mr Geoffrey Jefferson, Mr W. H C. Romanis, Mr R M. Vick, Mr Lancelot Bromley, and Mr Ivor Back Midwifery Mr J. Bright Banister, Mr Harold Chapple, Mr. Stanley Dodd, Mr Malcolm Donaldson, and (if required) Mr. W. Gilliatt, Mr J M. Wyatt, Mr. Wilfred Shaw, Dr V B Green-Armytage, Dr J. R C Canney, and Mr. L Carnac Rivett

Sir John Rickman Godlee Celebration Dinner

We are asked to state that the last day for applying for tickets for this dinner, which is being held at the Dorchester Hotel on Nov 27th, is Nov. 19th Applications should be sent to the secretary at the Hospital for Epilepsy, Maida Vale, London, N.W.

University of London

Dr A M. H Gray has been re-elected dea faculty of medicine in the University.

It is announced that the Essex County Coun make a grant of £33,000, payable over ten years, the erection of new buildings in Bloomsbury

The title of the university chair of obstetric tenable at University College Hospital medical been changed to chair of obstetrics and gynæcol

The degree of Ph D has been awarded to Ral (anatomy), Phyllis A. Clapham (helminthology), Dewar and A A H. Sabir (pharmacognosy)

The following examiners have been appointed M S examination (Branch III) which will be December: Mr. C. B Goulden and Mr R F and (if required) Mr H. Neave, Mr. E. Rock Car Mr. E K Martin

The university medal in medicine at the M.D tion has been awarded to Dr L. G Norman, university medal in surgery at the M S. exam Mr David Trevor

Dr. L W Hackett, assistant director of th national health division of the Rockefeller Fo is to give five Heath Clark lectures, on malaria at 5 P.M daily from Dec. 3rd to 7th.

Dr F W. Twort, F R S, professor of bacteriol university, and superintendent of the Brown In will lecture on Dec 10th, 12th, 14th, 17th, and primitive forms of life Both series of lectu given at the London School of Hygiene and Medicine, Keppel-street, W C, at 5 P M

College of Surgeons of England

rdinary meeting of the council was held on Nov 8th, Sir Holburt Waring, the president, in the chair ported the award of Mackenzie-Mackinnon research ships to Dr E G L Bywaters and Dr L C Bousfield research into rheumatoid arthritis, to be carried the Middlesex Hospital medical school

omas of membership were granted to the candidates names appeared in our issue of Nov 3rd, p 1022 N Angel, R C F Catterall, G M Davis and nayaka), and also on S H Awad and A H Khan omas in public health and in gynæcology and ies were granted to candidates whose names on the same page

h College of Obstetricians and Gynæcologists

special meeting of the council held on Nov 5th norary fellowship was conferred on Dr Archibald d, emeritus professor of clinical obstetrics and ology in the University of Manchester and Sir n Smyly, consulting gynæcologist to the Rotunda al, Dublin, and the fellowship on Dr W F T un (Edinburgh) The following were admitted membership —

Clift D W Currie, M D A Evans W D Galloway Higgins, R N Howard, R J Kellar J H Peel Jack y A I Potter J L Scholes P N L Seager T F C H Walsh, C A Whitfield Bryan Williams and oung and J N Chesterman, T F Corkill Frieda R ay, and Nora P Sims (in absentia)

rown Craig (Sydney) and Benjamin Philip Watson York) were admitted in absentia to the foundation hip, and William Allan Dafoe (Toronto) to the tion membership

Faculty of Physicians and Surgeons of Glasgow

he annual meeting of the faculty on Nov 5th the ng were elected office bearers for the ensuing president, Dr J M Munro Kerr visitor Prof ald Young, hon treasurer, Mr J H MacDonald, brarian, Mr W R Snodgrass Other councillors H Edington (representative on the general medical l), Dr Carstairs Douglas Mr John Gracie Dr A Kelly, Dr J Souttar McKendrick, Mr R Barclay Mr John Patrick, Mr William J Richard Mr John Mr J Forbes Webster, and Mr R F Young

Malcolm Watson, director of the Ross Institute of al Hygiene, London School of Hygiene and Tropical ne, will deliver the Finlayson memorial lecture in aculty Hall, 242, St Vincent-street, Glasgow on y, Nov 19th, at 4 P M His title will be Some from the History of the Prevention of Malaria

College of Physicians of Edinburgh

uarterly meeting of the college was held on Nov 6th Dr Edwin Bramwell, the president in the chair R Currie (Glasgow) Dr A G Cruikshank urgh), and Dr Douglas A Miller (Edinburgh) troduced and took their seats as fellows Dr I A D h (Dunedin N Z) Dr J Burnett King (Edinburgh), Alastair Bruce (Edinburgh) Dr D K Henderson urgh), and Dr R F Ogilvie (Edinburgh) were d to the fellowship

Hill Pattison Struthers bursary in anatomy and logy was awarded to Arthur T R Hamilton

ry of the London School of Hygiene

annual report of this library puts the stock exclud partmental collections, at 20,471 bound volumes and pamphlets Losses shown on stocktaking are trivial gh readers enjoy freedom of access to the majority books and have no irksome supervision a policy t which has amply justified itself Mr C C Barnard rarian makes it his practice to instruct new students use of the library and in bibliographical methods preliminary talk in a lecture theatre a tour is made library at which members of the staff are wont to

In response to a petition by a large number of ts the library has been kept open later on two s a week during term time; and the members of ary staff itself have shown keenness in improving qualifications and professional status There has n increase of 18 in the list of current journals which umber 416 It is in fact distinctly a library to ual of

Liverpool School of Tropical Medicine Award of Mary Kingsley Medals

Lord Leverhulme presided at a reception on Nov 6th when awards were made of the medal founded in 1904 to commemorate the services to tropical medicine of that intrepid traveller, Mary Kingsley It was largely due to Ronald Ross's discovery of 1897 Lord Leverhulme remarked, that West Africa could no longer be described as a place unfit for white women to live in, where only the toughest of mankind could hope to survive The Liverpool school was the first to show that disease could be avoided and tropical regions made healthy, between 1898 and 1914 it had despatched 32 expeditions to West Africa and other tropical areas Work was now largely concentrated in the Sierra Leone laboratory where a period of financial difficulty had been surmounted Prof Warrington Yorke then introduced the six recipients of the medal two of them receiving it in an honorary capacity Mrs Middlemass Hunt, as widow of the honorary dean of the school from 1921 to 1932, who endowed the chair of tropical diseases of Africa, Miss A R Caton, who founded a research fellowship to the memory of her father, Dr Richard Caton, vice-chairman of the school at the time of his death in 1926 Prof Yorke briefly outlined the services to medicine of the other four recipients

Dr HENRY BEEUWKES directed the Yellow Fever Commission of 1925 to West Africa under the auspices of the Rockefeller Foundation This commission proved that the mild and widespread fever of Nigeria was identical with that found in South and Central America and produced evidence that Noguchi's spirochæte had nothing to do with it An insuperable obstacle to further advance was the failure to infect African monkeys with yellow fever Beeuwkes found that the Indian monkey was susceptible and developed an acute and rapidly fatal disease It was soon established that the disease could be transmitted from one monkey to another by stegomyia and other mosquitoes that the cause of the disease was an ultramicroscopic virus that monkeys which had recovered were immune, and that the blood of cured animals protected others from contracting the disease The last four years have been spent in elaborating these fundamental discoveries and in giving them practical application they have proved the basis of modern methods of mapping out the distribution of the disease and of the protection of man by inoculation The disease exacted a heavy toll before yielding up its secrets no less than six of the commission lost their lives four of them from yellow fever Such brilliant results could never have been obtained had it not been for the inspiring leadership outstanding courage, and administrative ability of the director himself

Sir GEORGE BUCHANAN can look back over nearly 40 years of public medical work The investigation and control of epidemic diseases both nationally and internationally have provided him with adequate scope for his profound epidemiological knowledge and his skill in administration In the epidemic of arsenical poisoning of beer in Lancashire and the North of England in 1900 he was entrusted with the inquiry the outcome of which was the creation of the office of chief inspector of foods which he held until 1910 During this period he was instrumental in securing the coöperation of the port sanitary authorities in our present system of inspection of imported food. Many far reaching international agreements such as the Brussels Convention have been largely due to his negotiations the most important being the International Sanitary Convention of 1926 which recast and modernised the whole system of preventing the spread of small pox typhus cholera plague and yellow fever, and the International Sanitary Convention for Aerial Navigation of 1933 which is directed to the control of yellow fever He continues to take a prominent part in public health in his double capacity of president of the International Office in Paris and vice president of the Health Committee of the League of Nations

Sir RICKARD CHRISTOPHERS served on the Malaria Commission of the Royal Society and Colonial Office which brought to light the fundamental fact that malaria in the tropics is primarily a condition of almost universal infection of indigenous races and especially of native children It thus became possible to state clearly the reasons why tropical countries were so unhealthy to Europeans and to outline methods whereby much of this sickness could be avoided. Segregation of Europeans has since been widely applied Stephens and Christophers were also the first to establish the malarial nature of blackwater fever Observations on the selective breeding habits of different species of anopheline mosquitoes in 1911 laid the foundation of [illegible] sanitation" His systematic work on the anopheline [illegible] has greatly advanced knowledge of these insects He was also the first to describe hereditary transmission [illegible] through the tick and one of the early investigators of kala azar He is now professor of malaria studies in the [illegible] and is carrying out important researches on antimalaria [illegible] under the auspices of the Medical Research Council.

Sir MALCOLM WATSON, who is director of the Ross Institute of Tropical Hygiene, was one of the earliest workers to grasp the significance of Ross's discovery His antimalarial work in the towns of Klang and Port Swettenham in 1901 [illegible] the port from [illegible] and within a year [illegible] number of deaths He discovered that there were [illegible] as well as malarial rice fields and swamps in Malaya, and this observation was the origin of various biological methods of control In connexion with this antimalarial work he has contributed to knowledge of its pathological effects and its tendency to increase the number of deaths included in that *ill-defined category "other diseases"* *The system of subsoil* drainage widely used in Malaya to-day is largely a result of his efforts In 1924 he commenced antimalarial measures in Assam, *and later* he organised a branch of the Ross Institute in India His work, contained in some 70 published papers, shows clearly how, even while engaged in the practical application of the most promising of the known methods of prevention, he was constantly investigating fresh methods

At the annual *meeting of the school* on the same day the foundation was announced of a chair of tropical hygiene.

American College of Surgeons

At the recent congress of the College held in Boston, honorary fellowships were conferred on Sir Harold Gillies, Prof Josef Halban (Vienna), Mr Harry Platt, and Dr Bethel Solomons

Royal Statistical Society

At a meeting of this society to be held in the hall of the Royal Society of Arts, John-street, Adelphi, London, at 5 15 P M on Tuesday, Nov 20th, Dr Major Greenwood, F R S , professor of epidemiology and vital statistics *at the London School of Hygiene and Tropical Medicine*, will deliver a presidential address on university education, its recent history and function

National Health Insurance—Arrears Payments

The Minister of Health has decided to extend the period of grace within which insured persons other than voluntary contributors *may pay any* arrears of National Health Insurance contributions in respect of the contribution year which ended on July 1st last The period of grace would normally expire on Nov 30th, 1934, but will be extended to March 31st, 1935, so that any insured person in arrears, who makes the appropriate payment before then will be entitled to full cash benefits in 1935, after a waiting period of four weeks from the date of the arrears payment

University of Birmingham

A readership in industrial hygiene and medicine has recently been created at this university The new department is designed to coördinate existing knowledge concerning industrial health, to undertake research into possible causes of industrial illness, and to give facilities *for the post-graduate study of the subject* It is the first department of its kind in this country, and Dr Howard E. Collier has been appointed as the first reader

Dr Collier was born in 1890 and educated at Reading School and University College, Reading He graduated M B , Ch B at Edinburgh in 1914 *After holding resident positions at hospitals* in Ramsgate and Reading he received a commission in the R A M C (T) in 1915, and saw service with the Mediterranean expeditionary force and also in France and Flanders where he was regimental medical officer to the 1st Gloucestershire Regiment After a brief period of service with the Army of Occupation he was awarded the M C , and in 1919 he settled in general practice in Redditch (Worcs) In 1921 he was appointed certifying factory surgeon and district medical officer of health for Redditch The variety of industrial processes carried on in this area gave Dr Collier opportunity to develop his interest in industrial health problems and he has made a special study of lead poisoning, of chrome ulcer, of industrial dermatoses, and of gas poisoning

British Empire Cancer Campaign

At the quarterly meeting of the Grand Council held on Nov 12th, Sir Holburt Waring presiding, grants were allocated totalling over £20,000 for the year 1935

£8000 to the Cancer Research *Department of the* Middlesex Hospital £5000 to the Cancer Hospital (Free) £2500 to the Cancer Research Department of St Bartholomew's Hospital £2000 to Mount Vernon Hospital £650 to the Cancer Research Department of St Mark's Hospital £600 to the Marie Curie Hospital £550 to Mr I Hieger, working at the Cancer Hospital *£500 to the Westminster Hospital* *£350 for the* Radon Centre at the Middlesex Hospital (through the Medical Research Council) £350 to the Strangeways Research Laboratory, Cambridge £300 to Dr. P R Peacock, for the salary of an assistant, at the Glasgow Royal Cancer Hospital £200 to Dr Alexander Haddow, working at Edinburgh University £200 to Mrs Barbara Holmes, working at Cambridge £100 to Mr W S S Ladell, working at King's College Hospital

Also a sum of £1750 for the salaries and expenses of two whole-time workers, who will investigate schemes of research initiated by the scientific advisory committee of the Campaign

The trustees of the late Mr. David Shields Crawford, of Edinburgh, have given £5000 to the Campaign.

THE Children's Section of the Royal Nor Hospital in Sydney, founded in 1885 and reb has been renamed the Princess Elizabeth H

Dr. Edith Summerskill is standing in th interest at the by-election in the Putney & Wandsworth.

British Health Resorts Association

The annual general meeting of this associati held at the Institute of Hygiene, 28, P London, W., at 3 30 P M , on Thursday, N

Royal Northern Hospital

The dining club of this hospital will meet Royal, Regent-street, W , on Friday, Nov 8 30 P M The president, Mr M Coleman, wil chair, and Lord Horder, consulting physicia hospital, will be the guest of the club The h is Dr H A Cowan, 32, Fitzroy square, London

Continental Anglo-American Medical

At a recent meeting of this society held in Leonard Robinson being in the chair, it was d arrange a scientific programme on the Riviera t be decided by members practising there, the Christmas vacation. Clinical demonstratio given at the *American Hospital* by *the* Paris during the meeting next May.

British Science Guild

The tenth annual Norman Lockyer lecture wil *at 4 30 P M on Wednesday, Nov 28th, in the* G Hall, London, E C , when Prof J B S H professor of genetics in the University of Lon speak on human biology and its applications may be had from the secretary of the Guild, 6, Adelphi, London, W C.2

Instruction for D.P.M.

A series of lectures and practical courses wil in January and February (part I.) and in March (part II), 1935, at the Maudsley Hospital, D London, S E , primarily to candidates for d psychological medicine The lecturers and dem include Dr F L Golla, Captain S A. M *Dr Henry Devine, Dr* Edward *Mapother*, Prof. Aveling, Dr F C Shrubsall, Dr Thomas Tenne *Foster Moore, Dr. Bernard Hart*, Dr A J L Mildred Creak, Sir Hubert Bond, and Dr W Nor Particulars of the series, which begins on Jan had from Dr Golla, hon director of the medic at the hospital

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BUCKSTON-BROWNE DIN

ROYAL COLLEGE OF SURGEONS OF E

IN 1927 Sir Buckston Browne endowed a to be held annually on the College prem fellows and members and such others as the and council may invite. At least half those were to be members of the College Spe the seventh of these dinners on Nov 8th Sir Waring, the president, referred appreciati this endeavour to promote good fellowship all those connected academically with the It had been said in the past that the Col not given as much attention to surgical as it might have done Now, however its extensive laboratories and by scholarsh *Radium Institute* and *elsewhere*, it was excellent work by which the standards of would undoubtedly be advanced investigations of the Leverhulme, Buckston and College scholars he mentioned espec observations of Mr. Laurence O'Shaughn Dr. David Slome on the cause of traumat and spoke of a new investigation into th deformities arising from trauma and wound tions; he did not agree with the view that of surgery had reached its zenith and was no further improvement In its capacit

ADDRESSES AND ORIGINAL ARTICLES

TREMOR, ATAXY, AND SPASM *

Wilfred Harris, M D Camb , F R C P Lond

R PHYSICIAN, HOSPITAL FOR EPILEPSY AND PARALYSIS,
AIDA VALE AND PHYSICIAN TO DEPARTMENT FOR
NERVOUS DISEASES ST MARY'S HOSPITAL

discussing the causes and mechanism of tremor lude not only rhythmic tremors but also irregular incoördinate movements, and before we can mpt to understand the different varieties of or and irregular movement, it will be advisable fresh our memory on some points of the physiology nuscular contraction and of the anatomical lexions of the various nervous mechanisms erned in the regulation of voluntary movement

etal, striped, or voluntary muscle fibre depends ts tonus and nutrition upon the integrity of a r motor neuron, the anterior horn cell and its n, or peripheral motor nerve All efferent ulses to the muscle reach it through this motor e-fibre, named by Sherrington the Final Common h, whereas there are numerous afferent paths of ory fibres from the muscle and from other tures influencing the stimuli either by inhibition y excitation, which ultimately reach the anterior cell It is the various sites of lesion in these r mechanisms which determine the clinical forms ae irregular movements which are expressed by different forms of stimuli reaching the muscle *his final common path the motor nerve fibre*

rst, what do we understand by muscle tonus? s a comparatively steady condition of partial raction of the various fibres making up a muscle, to rhythmic volley firing of motor impulses ted from the numerous anterior horn cells lying the muscle Even a small muscle as the r brevis pollicis is supplied by at least 200 motor s, each of which breaks up into about 30 fibrilla ese impulses are completely cut off as by section e nerve, then the muscle tissue lies completely and flaccid, and its structure quickly becomes rganised, wasting away, and unrecognisable uscle tissue after some weeks

o long as the lower motor neuron and muscle- are healthy, these continual rhythmic impulses tain the nutrition and tonus of the muscle e impulses seem always to be of maximal ngth, for any stimulus that can overcome the nal refractory limit of a nerve fibre starts a imal impulse, that is to say, it is all or none ying degrees of strength of maximal contraction due to more and more cells firing in volleys at same time until when all are at work the maximal cular contraction has been reached, which cannot creased by augmenting the stimulus Relaxation muscle is as important as contraction and any ulus which contracts the flexors, at the same time xes the extensors when all mechanisms are acting mally Sensory impulses are continually passing to the cord via the posterior roots from the cles skin and joints, and reflexly exert influences n the anterior horn cells either directly across spaces, or indirectly via the posterior columns afferent cerebellar tracts so that the amount of ured muscular contraction is kept steady With out these afferent mechanisms working properly, the efferent motor stimuli will at once become jerky, as in disseminated sclerosis tabes, Friedreich's disease, &c

The cerebellum is the chief coördinating centre for muscular movements, and it receives its afferent stimuli from the muscles and other peripheral structures partly via the posterior columns and posterior column nuclei and partly via the direct cerebellar and ascending antero lateral tracts

The direct cerebellar (D C) reaches the cerebellum by the inferior peduncle or restiform body, and the smaller tract through the superior peduncle The cerebellum also has important crossed connexions through the middle peduncles with the opposite frontal and motor cortex, while it has efferent paths to reach the spinal cord through the opposite red nucleus and through Deiters's nucleus of the same side The cerebellum has therefore, indirect control on musculature by its crossed connexions to the opposite frontal and motor cortex, and the rubro-spinal tract, and also direct efferent paths to the anterior horn cells via Deiters's nucleus and the vestibulo-spinal tract of the same side

Spinal Disorders

The simplest forms of tremor to understand are those of spinal origin The fibrillary contractions of parts of various muscles such as the first dorsal interosseous, or the extensors of the fingers, or deltoid, that are so familiar *in progressive muscular atrophy*, are clearly due to the progressive wasting of groups of anterior horn cells *interrupting the rhythmic* volley firing of the nerve cells, and thus setting up irregular or incoördinate explosions of the clonic impulses resulting in visible contractions Fibrillary tremors are thus a valuable clinical sign in the differentiation of progressive muscular atrophy of spinal origin from other forms of atrophy, such as the primary myopathies Fibrillation of muscles or *myokymia*, is a fairly frequent phenomenon in many normal individuals, varying under different conditions, especially in fatigue and when unassociated with progressive atrophy and weakness it is to be looked on as an expression of differing nutritional influences upon the irritability of the anterior horn cells and of no serious significance *Myoclonus* or paramyo clonus, also of spinal origin and unassociated with wasting is characterised by irregular contractions of muscles and parts of muscles, as distinct from coördinated movements, such as are seen in chorea

We have already said that the anterior horn cell is influenced by numerous other cell groups and reflex actions of various kinds These stimuli reach the anterior horn mainly by four routes which we may designate by arrows pointing downwards along the cord (see Diagram)

Cerebrum and Cerebellum

Perhaps the most important of these is the pyramidal fibre which takes its origin in a Betz cell in the opposite motor cortex passing downwards through the interna capsule and decussating in the pyramid of the med [illegible] to reach the opposite crossed pyramidal tract in the [illegible] cord This upper motor neuron is continually av [illegible] the lower motor neuron with tonic impulses of [illegible] kinds and strengths mainly of an inhibitory [illegible] more or less opposite in kind to tonic impulses [illegible] by the opposite half of the cerebellum Lesions [illegible] of the motor cortex or of its axons in the [illegible] lead not only to hemiplegia or paralysis [illegible] arm and leg, but also to rigidity [illegible] together with that seen in [illegible] strati [illegible] is of the same kind [illegible] in degree [illegible] that seen in the [illegible] rigidity in the experimental animal, whose hemispheres have been amputated through the brain stem above the level of the red nuclei We owe this demonstration to Sherrington, who also proved that electrical stimulation of the cerebellar cortex at once relaxed this decerebrate rigidity as long as the stimulus lasted The decerebrate animal will stand with limbs extended, motionless for days, clearly proving that the cerebellum through its dentate nucleus and its connexions to the opposite red nucleus supplies tonic extensor impulses to the anterior horns through the rubro-spinal tract, which could be inhibited temporarily by electrical stimulation of the cerebellar cortex This rubro-spinal tract decussates by means of Forel's decussation to reach the lateral columns of the opposite side of the spinal cord, and thus the cerebellum, by means of a double decussation, exerts its influence upon the musculature of the same side of the body.

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* A clinical lecture delivered at St Mary's Hospital on Nov 4th

Cerebellar influences may also reach the cord by an uncrossed pathway, through its connexion with Deiters's nucleus and the vestibulo-spinal tract Cerebellar lesions thus tend to produce hypotonia, or undue relaxation of the musculature on the same side of the body, whereas cerebral lesions give rise to hypertonia, or rigidity of the opposite side It may thus be expressed that irritant cerebellar lesions produce tonic spasms, the so-called cerebellar fits, while negative degenerative lesions produce hypotonia of the same side On the other hand, negative degenerative cerebral lesions produce paralysis and rigidity of the opposite side, with increase of deep reflexes, while irritant cortical lesions produce clonic convulsions followed by flaccidity and loss of deep reflexes.

The *knee-jerk*, as a type of deep reflex, is not a simple idio-muscular contraction produced by a sudden stretching of the muscle when tapping its tendon, but is a true reflex, as is shown by its inhibition by stimulation of sensory nerves, or slight involuntary flexor action of the hamstrings It was formerly thought that there was insufficient time for afferent and efferent stimuli to run up and down from knee to spinal cord, and for the necessary passage of the stimuli across the synapses in the cord itself, but of late years it has been shown that the speed of passage of the impulse along mammalian nerve may be as high as 120 metres per second, which allows sufficient time for the whole process to be a reflex The afferent portion of the reflex does not arise from the skin or tendon tapped, because the tapping may be applied far from the muscle or tendon, as in testing the biceps jerk by tapping the radius near the wrist when the forearm is semi-flexed This produces a sudden stretching of the biceps, which causes it to contract, Even better proof that the stretching of the muscle is the origin of the afferent stimulus for the reflex is the apparent simultaneous contraction of the triceps, which can be observed if

carefully looked for This is due to the sudden s
of the triceps by the flexion of the forearm by the
contraction, and if timed carefully by suitable ap
would be found to occur a fraction of a second la
the biceps contraction

The cells in the motor cortex are exposed to
afferent stimuli along reflex paths from other
fibrillæ which impinge upon the pieds terminaux
protuberances along the sides of the cell body Th
irritability of the cell will be affected by emotio
enced by the intellectual centres, fright, anger,
hate, and other manifestations of consciousness,
to stimuli reaching it from the corpus stria
thalamus of the same side, and from the opposi
the cerebellum You may shiver with cold or fr
or shake with rage, or quiver from excitem
pleasure Any or all of these influences will
intensity of the efferent stimuli from the Betz ce
pyramidal fibre and the opposite anterior horn c
addition the basal ganglia, corpus striatum,
have a direct pathway for efferent stimuli to
anterior horn cells Beneath the thalamus and in
with it lie the red nucleus and the substantia nigra,
the hinder portion of the lenticular nu
connected with the thalamus and the red
by a special bundle,
lenticularis T
also receives stimul
the superior pedunc
the dentate nucleus
cerebellum, and fr
red nucleus arises
spinal tract, which
over to the oppo
in Forel's de
runs down in the
columns of the cord.
corpus striatum ca
affect the lower moto
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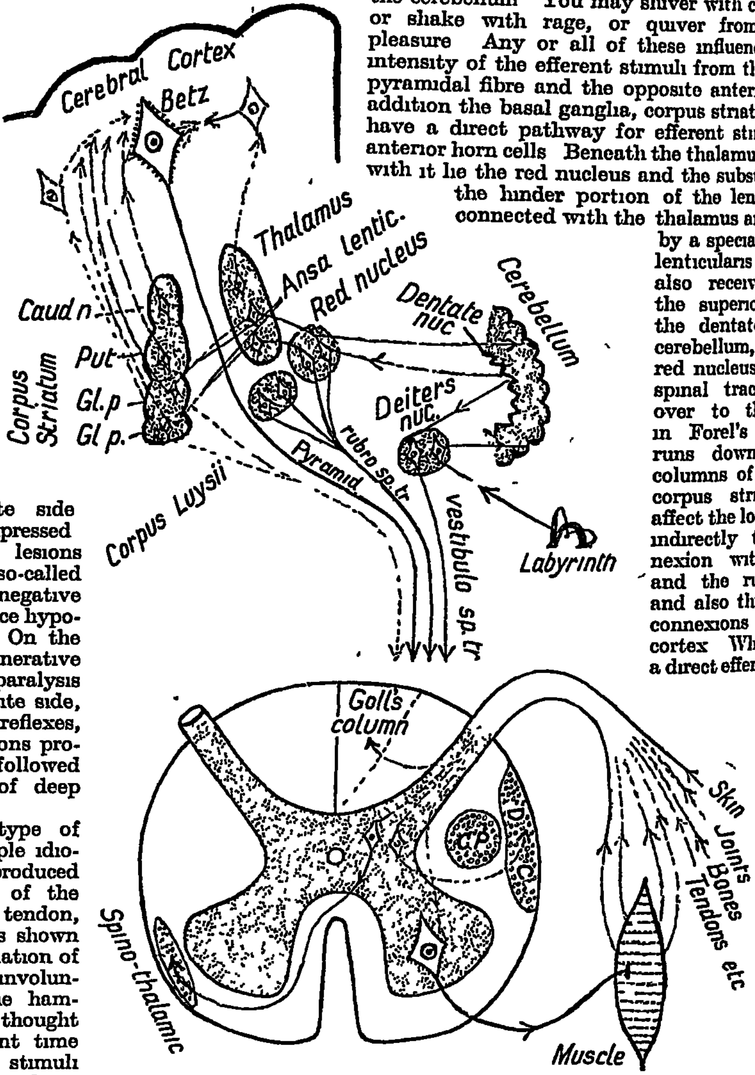

Diagram to illustrate cerebral and cerebellar efferent paths of muscular control

CP = crossed pyramidal DC = direct cerebellar tract

vestibulo-spinal tract The vestibular portion
auditory nerve arises in the labyrinth, end
lateral auditory nucleus or nucleus of Deiter
has connexions with the cerebellum, and emits the
fibres to the cord known as the vestibulo-spinal
The vestibular nerve is concerned with the
balancing and the recognition of the position of
in space, and lesions of it produce that form of
tion known as titubation

In considering the effect of chronic dege
lesions of the brain, we must remember that
dealing with a process of dissolution, and

toms associated with such diseases are not
ive effects of the lesions concerned, but due to
oss of the tonic stimuli from the part concerned,
o the unopposed tonic stimuli proceeding *from*
centres This we have already referred to
nnexion with the rigidity seen in hemiplegia and
ne disease of the corpus striatum, which may be
ared with the more intense rigidity of the
ebrate animal

ghlings Jackson used to teach of three levels of
lution, the frontal cortex, motor areas, and the
l cord, and he foreshadowed the opposing effects
rebral and cerebellar influences, later proved
imentally by Sherrington

Clinical Classification of Causes

may now turn to a clinical classification of
s of incoördination and tremor which for
mience may be divided into eight groups —

TREMOR, ATAXY, AND SPASM

Psychotic —Emotion, hysteria, neurasthenia, fright, shock, tics or habit spasms
Toxic —Alcohol, mercury, manganese, hyperthy- m
Cortical degenerations —G P I , various forms of halitis, senile, familial, arterio sclerosis, Huntington s a, ? Sydenham's chorea, diplegias
Corpus striatum —Wilson's disease, torsion spasm, osis, paralysis agitans, and parkinsonism
Thalamus, red nucleus, substantia nigra corpus i —Thalamic syndrome, various violent choreas, us post-encephalitic phenomena
Cerebellar —Friedreich's and other hereditary ataxias, llar tumour, and vascular lesions
Spinal cord —Myoclonus, myokymia P M A , dis ated sclerosis, tabes
Nerve —Clonic facial spasm

The *psychotic* group need not delay us as their
s are self evident

Amongst *toxic* causes, hyperthyroidism and
es's disease show fine tremors and other symp
resembling grave neurasthenia Acute and
ic alcoholism as a cause of fine tremor are well
n, and chronic alcoholism sometimes may
what closely resemble G P I , for Argyll Robert
pupil is not unknown in chronic alcoholism
ut any specific infection Mercury poisoning is
with in workers in electrical gauges, and formerly
ermometer and mirror makers Furriers may
suffer through absorption of mercury nitrate
remor is rather coarse in type and sufferers from
ve been compared with marionettes on wires
anese poisoning may affect the cortical cells,
s also liable to cause degeneration in the corpus
um resembling parkinsonism

Cortical Degeneration —Degenerative lesions in
ortex may be due to rheumatic or Sydenham's
a, and also to Huntington's chorea The site
e lesions in rheumatic chorea is disputed accord
o some authors the chief lesions being in the
ganglia Huntington's chorea is a chronic
eration especially in the frontal lobes and motor
x, closely resembling that of G P I and also of
nterior portion of the lenticular nucleus The
se usually commences about the age of thirty and
s irregular choreiform movements associated
with mental degeneration leading to dementia
ay be a family disease but never skips a
ation, as often occurs in Friedreich's disease

following two cases, father and daughter, illustrate
this The father now an advanced case of the disease,
eloped signs 17 years ago His jerky choreiform movements and his almost inability to stand are noteworthy He can talk rationally, though the articulation is ataxic and jerky, and his mentality is very defective in many ways, with a liability to explosions of temper and violence The daughter now 20 began to be unsteady and to drop things at the age of 15 and has gradually become rather fatuous, she is unsteady in gait, having been accused in the street of drunkenness She can knit but is unsafe with crockery, she can be trusted on errands and with money, but her mentality is childish for her age

It has been stated that the symptoms develop later with succeeding generations, but in this instance the reverse is the case (what is called anticipation, a *phenomenon often observed in hereditary* chronic nervous diseases, including the insanities) It has been suggested that this progressively earlier appear*ance of the symptoms is an effort of the stock to cure* itself of the disease taint, a race suicide

Acute encephalitis may lead to monoplegia hemiplegia, or diplegia when the disease is widespread and bilateral, and the irregular movements are then liable to be extremely coarse and widespread, while walking may be delayed until the tenth or twelfth year, and mental deficiency is also common when the frontal lobes are involved

Senile and familial tremors may be closely related, there is no rigidity, only the tremor resembling that of parkinsonism which should usually be easy to distinguish The prognosis however both in familial and senile tremor, is hopeless as regards cure or checking

4 It is only twenty two years ago that the *corpus striatum* was shown by Kinnier Wilson to be the site of degenerative lesions associated with rigidity and tremor Paralysis agitans or Parkinson's disease has been known for over a hundred years since his original description in 1817, but it is only of late years that Ramsay Hunt and others have assigned the site of its lesion in the pallidal region of the lenticular nucleus This has not yet been so conclusively proved as in Wilson's disease, or progressive lenticular degeneration Wilson demonstrated chronic degeneration in the putamen in several cases of this disease, which may be familial. These cases do not resemble Parkinson's disease at all closely, though the tremors and rigidity recall this disease. Characteristic signs are the spastic smile with mouth fixed open, the meaningless laughter mental hebetude and especially the associated atrophic cirrhosis of the liver Allied to this disease is torsion spasm—a rare form of irregular slow spastic movements of head, trunk, and limbs. This disease differs from athetosis a sequel of infantile hemiplegia or diplegia in that in the latter the torsion spasms affect the limbs only

Below the thalamus and adjacent to the substantia nigra, with both of which it has fibre connexions is the hypothalamic nucleus or corpus Luysii lesions of which have been known to give rise to coarse spontaneous and severe choreiform movements of sudden onset

Parkinsonism is a common sequel of encephalitis lethargica, and since the appearance of this disease in 1917 innumerable cases of parkinsonism have been seen in young adults and even in children Many cases of young persons as in the case of this patient to-day give no history suggestive of acute encephalitis or severe influenza but yet we believe them to be post encephalitic in origin

Previous to the war parkinsonism and paralysis agitans were extremely rare under the age of forty years The lesions in encephalitis lethargica are especially prone to affect the region of the substantia nigra lying ventral to the thalamus, and possibly the pallidal portions of the lenticular nuclei are also involved.

In a typical case of parkinsonism the mask-like expressionless face, the drooling of saliva, the slow deliberate movements with the varying tremor of the hands and feet may be observed. The gait is characteristically shuffling, the arms hanging by the sides and not swung, and slow turning movements such as a pair of tongs would make. When the patient is told to look at any object the eyes turn first, the head slowly following. The tremor is rhythmical when the limbs are at rest, but may cease for a few moments on voluntary effort. The head does not shake as in senile tremor unless the violence of the tremor in the arms is sufficient to shake the whole body Mentality is scarcely affected, but the prognosis is one of relentless progress of the symptoms and of generally increasing feebleness

The disease can be recognised at sight, even in the early stages by the mask-like expressionless face and the general stiffness of gait and loss of swinging of the hands, while the writing is often noticed to be very much smaller Unless the clinical picture as a whole is taken in and recognised at once, the physician will often miss the diagnosis altogether

Stramonium, hyoscine, and belladonna are the only drugs that give any relief

Parkinsonism, like Wilson's disease, is due to an extrapyramidal lesion, and though increasing weakness and rigidity are produced, yet there is no true spasticity, and the deep reflexes are unaffected, and the plantar reflexes remain flexor.

5. Lesions of the *thalamus* are especially liable to produce disorder of sensation on the opposite side of the body, as the thalamus is a relay station for all the sensory fibres ascending from the spinal cord and cranial nerves Those concerned with tactile and postural sensations are mostly relayed to the parietal cortex, but pain, heat, and cold sensations mostly end in the thalamus Lesions may cause partial crossed hemi-anæsthesia, especially to pain and temperature, together with slight hemiplegic weakness without rigidity, but accompanied by tremor. These latter symptoms are due to the loss of the normal efferent impulses from the thalamus proceeding via the red nucleus and rubro-spinal tract to the lateral columns of the cord. Often there is a hemiplegic sensation of discomfort, or even spontaneous pains, and that side of the body may react more to strong, sensory impulses and to emotional disturbances. This group of symptoms of slight hemiplegic weakness, analgesia and tremor, with spontaneous pains, is sometimes known as the thalamic syndrome, described by Dejerine and Rousseau.

6 *Cerebellar* lesions, tumour, hæmorrhage or thrombosis, encephalitis, or even chronic degenerative lesions, usually produce marked incoordination of movement on the same side of the body, due to the loss of the governing quality of the cerebellar cortex upon muscular movements The intense ataxy and loss of sense of position of the body in space is sometimes extremely marked in cases of thrombosis of the posterior inferior cerebellar artery. In addition to the usual crossed sensory loss on the face of the same side and of the opposite half of the body below the level of the fifth cranial nerve, static and locomotor ataxy may be intense, and the patient may require many months of gradual practice before he can walk at all properly.

I have known cases at the commencement to feel completely reversed in space for some hours, one man who was taken suddenly ill in his bathroom having to hold on firmly to the sides of the bath to prevent himself falling down on to the ceiling, from which he could see the electrolier sticking up vertically towards him. man, after admission to hospital, described his as though all the beds in the ward were stuck to the ceiling, while the ceiling loomed underneath him.

In the ataxy of cerebellar disease the limbs for their objective unsteadily, and the gait is or reeling, especially towards the side of the The ataxy is not increased by closing the eyes, tabes, nor is there any loss of sense of position joints The arms share in the general ataxy bellar disease, with irregular incoördinated ments Nystagmus, an ataxy of eye often present, and there is a slowness of and arresting repetitive movements, such as or supination of the hand, named by adiadokokinesis

It must not however be imagined that of cerebellar lesions is as easy as this d suggest Although acute and sudden lesions cerebellum will almost certainly produce resembling those I have described, yet, in lesions such as tumour, it is frequently even large tumours of one lateral lobe or even vermis are sometimes unaccompanied by any nystagmus, or other of the well-known signs

Hereditary Ataxy—A group of closely diseases, known as the hereditary ataxias, is with degeneration of the cerebellar afferent the spinal cord, and occasionally with some the cerebellum itself.

A case of Friedreich's disease illustrates a coördination of the muscles of the limbs, trunk, speech, &c, due to a primary atrophy or afferent cerebellar tracts. The incoördination of is cerebellar in type and is not increased by eyes, as in tabes, nor is there any loss of sense of of the joints, or cutaneous anæsthesia As in tabes, is loss of the knee-jerks and other deep reflexes, plantar reflexes are extensor, owing to the sclerosis of part of the crossed pyramidal tract direct cerebellar tract is atrophied and also the Clarke's column, which are its nuclei of origin The columns show considerable atrophy, especially Goll, or the median dorsal columns, and the poster also to some extent Hence there is coarse ataxy of deep reflexes and extensor plantars. The and staggers like a drunken man and his speech is and explosive, while choreiform tremors are the facial muscles and limbs Kyphoscoliosis is a symptom and also a definite tendency to pes the arching of the feet with dorsiflexion of the great when walking The ataxy of the arms differs intention tremor of disseminated sclerosis in the movement at the commencement in this disease, in disseminated sclerosis the incoördination wilder as the movement progresses The disease very chronic course and may last 30 or 40 years, considerable muscular wasting and some anæsthesia ing Mentality is unaffected and the eyes do not except occasionally with nystagmus. Severe sometimes met with, as in this patient, and even crises have been described I saw these crises with Argyll Robertson pupils in a girl of otherwise Friedreich's disease, who was the niece of another of mine with Sanger Brown's variety of hereditary This latter group may develop optic atrophy and and even Argyll Robertson pupil, with mental

Many forms of hereditary ataxy have been of which Friedreich's is the best defined group show increased knee-jerks and ankle-clonus scoliosis, but with optic atrophy and squints fairly well-defined group is known as hereditary ataxy, in which the syndrome is more of a paralysis than ataxy The lesion in all is ar, the spinal cord being notably small, with the atrophy being found in the dorsal and cerebellar s. This is a form of abiotrophy, a premature cence of certain nerve tracts, due to congenital in development, and not to any extrinsic factors, gh possibly excessive alcoholism in the parent is a r, as Friedreich originally insisted

oup 7, spinal disorders was dealt with earlier e paper

The last group contains one type only, *clonic spasm* It is true that some clonic facial ns are of cortical origin and are then allied to the but the type I am referring to here is due to some tional disturbance either in the facial nucleus or tion of the nerve trunk itself Many cases are a el to an incomplete Bell's palsy, or facial paralysis, h has partially recovered In the recovery, such racture gradually develops, so that the naso labial and other creases of the face become intensified, at the same time in many cases clonic twitching of ace develops on that side I have seen this follow al recovery and contracture after wounds of the l nerve in the parotid region, as well as in the moner type of Bell's palsy which is probably due cute geniculur neuritis, or after middle ear disease al paralysis is alone amongst lesions of the pheral nerves, in which clonic spasm of the muscu- re is a sequel to partial recovery

INDIVIDUAL VARIATION IN THE RESPONSE TO DRUGS*

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HE variability of patients in their response to gs is a fact well known by every practitioner of licine and hence any discussion of this variation seem somewhat superfluous I believe however, it is worth while attempting to make a quanti ve estimate of its extent, because although all titioners know that every patient presents a arate special problem in regard to treatment, yet only possible to determine the extent of the varia by making carefully controlled observations on e numbers of patients. Laborious work of this e is seldom undertaken and in its absence there is a ural tendency to class responses which only deviate htly from the normal as examples of variation but reat responses which vary widely as "accidents" to some unknown cause

The study of variation shows, however, that if a derate deviation from the average occurs commonly, n occasionally one will meet individuals that vary y widely indeed There has been a tendency in ent years to try to accelerate certain forms of atment by giving massive doses of drugs For mple Eggleston in 1915 introduced an intensive thod of digitalis therapy which consisted of culating the total quantity of drug needed to talise the patient, and giving half this quantity once another quarter six hours later, and remainder in subsequent smaller doses Such thods can only be safe if there is no wide individual iation in the response of patients to drugs, and nce it is of interest to try to determine the range of iation in response that may be expected

It is essential that any method of treatment should be reasonably safe ("Il est mort guéri" is not a satisfactory conclusion to a course of treatment) and although it is difficult to define the degree of safety that may reasonably be demanded, yet I think that most practitioners would agree that a method of treatment that involved an unavoidable chance of one death in 1000 cases was too dangerous for clinical use, and that the chance of death should be less than one in 10,000 The first problem therefore is to try to deduce from the data available the probable relation between the dose of a drug that usually produces toxic effects and the dose that will not produce toxic effects even once in 10,000 cases There is a considerable mass of data regarding variation in response to drugs, and in some cases the numbers of animals used amount to as many as two or three thousand

An estimate of the chance of a dose producing an occasional death can be made as follows A characteristic curve is constructed showing the relation between dosage and percentage mortality The standard deviation in symmetrical curves is equal to the difference between the doses killing 16 per cent and 50 per cent of the population The latter dose is termed the median lethal dose. A dose equal to the median lethal dose less 3 7 times the standard deviation will probably kill not more than one individual in 10 000

TWO IMPORTANT FACTORS

Two facts of outstanding importance must be recognised First, the amount of scatter in the response to drugs varies enormously in the case of different drugs. For example, the responses of animals to ouabain and digitalis are very constant, whilst the response to dysentery toxin varies over a huge range Consequently the variation in response observed with one drug gives no certain indication of the amount of variation that will occur with another drug Secondly, the amount of variation depends on the population For example an inbred population of mice gives a much more uniform response than do ordinary stock mice The following figures[1] show the kind of differences that may occur

Dose of neoarsphenamine as percentage of mean dose	Percentage mortality in—	
	(a) stock mice	(b) inbred mice
100	50	50
66	16	5
50	10	0
33	5	—
25	2	—

Human patients vary in every respect, and there is no chance of their response showing a uniformity at all comparable with that given by carefully selected inbred animals and the human response will indeed probably show a greater rather than a less variation than does the response of ordinary stock laboratory animals Provided that this fact is always borne in mind, it seems justifiable and interesting to see what indications animal experiments provide regarding the probable safety of various methods of massive dosage of human patients.

A certain amount of information is available regarding two important drugs used in this manner—namely, digitalis and neoarsphenamine

Massive digitalis therapy.—The figures relating to dosage of digitalis and mortality in frogs and cats show remarkably little variation in response They indicate that a dose equal to half the mean toxic dose would not produce death once out of 10,000 animals Digitalis is, of course, given to patients whose hearts are affected to a variable extent by disease and hence patients are likely to show a far wider variation in response than do healthy animals The results of the animal experiments are, however, encouraging, since they show that digitalis may be classed amongst the drugs which have a relatively uniform action when tested on large populations

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* Abstract of a communication made to the [illegible] rurgical Society of Edinburgh on Nov [illegible], 1934

[1] Taken from [illegible]

Neoarsphenamine —The results obtained with 1330 inbred rats (Morrell and Chapman, 1933) show that a dose equal to 47 per cent. of the mean lethal dose would kill only one individual in 10,000, whilst the results of Durham, Gaddum, and Marchal (1929) with inbred mice suggest that 40 per cent of the mean lethal dose would kill one individual in 10,000 The results of the latter workers with ordinary stock mice showed however wider scatter; one death in 20 mice was actually produced by a dose which was only one-third of the mean lethal dose, and the general slope of the curve suggests that one-sixth of the mean lethal dose would produce one death out of 10,000 animals Diseased human beings are likely to vary even more than ordinary healthy stock mice, and these results suggest that the therapeutic dose of neoarsphenamine should not be more than one-tenth of the mean lethal dose

The extent of individual variation in response to drugs was not generally realised twenty-five years ago, and it is evidence of Ehrlich's genius that he was so careful to find substances with a high therapeutic ratio before introducing them into clinical use.

LETHAL DOSAGE

Animal experiments show that if every care is taken to obtain as uniform a set of rats as possible and if a drug be given in dosage calculated according to body-weight in an absolutely uniform manner, then in the case of most drugs if a dose of one unit kills 1 per 1000, a dose of at least four units will be needed to kill all the other animals. It is very rare to obtain a more favourable result than this; and with many drugs there is a sixfold difference between these doses, and in some cases the range is far greater—e g, dysentery toxin All workers in this field have found that results as favourable as those mentioned can only be obtained with inbred stock of similar age and sex. It therefore is probable that in the case of human beings in health there is at least a fivefold difference in the lethal dose for susceptible and resistant individuals

Our knowledge of lethal dosage in human beings is very scrappy and inexact, but in the case of poisons commonly used for suicide, such as barbitone, there is a certain amount of evidence In this case the smallest fatal dose reported is between 1 and 2 g, the largest dose reported to have been survived is 24 g, whilst a dose of 10 g is nearly always fatal These results show about a sixfold variation between the smallest recorded and the usual lethal dose

A study of the evidence sometimes given in legal cases regarding lethal doses indicates that the extent of individual variation is not adequately recognised, since one sometimes finds dogmatic statements that such and such is the minimum lethal dose of a poison. The term minimum lethal dose really has very little meaning and we ought to speak either of the lowest dose that is recorded as having produced death or else of the dose that is usually fatal.

IDIOSYNCRASY

The examples of individual variation discussed hitherto have been cases where there has been less than a tenfold difference in the dosage ne produce the same effect on the least susceptib the most susceptible individual in a p There are cases, however, in which the vari spread over a much greater range. The ac dysentery toxin on mice is an example of and in this case some individuals survived a times the amount sufficient to kill the most individuals A variation of this extent question as to whether what we term a idiosyncrasy is merely a case falling at the end of a curve of individual variation The idiosyncrasy can however be used with safety drug produces a wholly abnormal type of For example, acetyl-salicylic acid produces a amount of gastric irritation in many persons some individuals are much more susceptible others, but probably a sufficiently large dose drug would produce this effect in most This is a clear example of individual var response shown by the general population. other hand in the case of about one person in quite a small amount of acetyl-salicylic produce a general urticaria which is a wholly response that could not be produced in the rest population by any dose of the drug This qualita abnormal response may suitably be termed crasy.

Dr G. H Percival[3] made some interesting regarding the individual variation in the patients to skin irritants He found that the concentration of mercuric iodide and chloride produced irritation in a group of patients was in 3000 but that certain individuals responded concentration of one part in 100,000, whilst were not affected by one part in 1000 This sys study showed a continuous variation in suscept extending over a hundredfold range in and hence the very susceptible individuals really examples of idiosyncrasy, although if casually they would probably be classified as su

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SURGICAL ANATOMY OF THE ANAL CANAL

WITH SPECIAL REFERENCE TO ANORECTAL

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AND

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Though incontinence of fæces after surgical ment of fistula-in-ano is nowadays rarely seen, *fistulæ* following surgical treatment are by no uncommon There are various reasons why the remain unhealed. Sometimes the surgeon succeeded in discovering the main track of the into the anal canal; on other occasions he may shown operative timidity in estimating the am sphincter ani that can be safely cut, or in de the amount of muscle that can be left and be upon to function successfully and maintain conti For these reasons we were stimulated to prese work.

Muscles of the Anal Canal

SPHINCTER ANI EXTERNUS

The external sphincter of the anus is a tri muscle which together with the puborectalis

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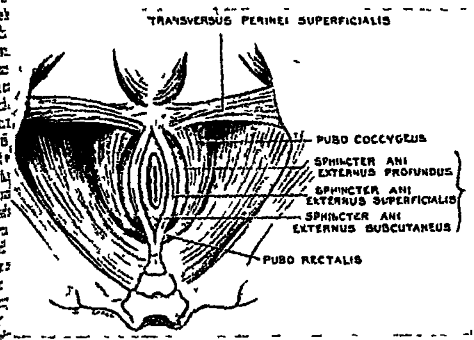
[3] Brit. Jour Dermat., 1933, xlv, 49


TRANSVERSUS PERINEI SUPERFICIALIS
PUBO COCCYGEUS
SPHINCTER ANI EXTERNUS PROFUNDUS
SPHINCTER ANI EXTERNUS SUPERFICIALIS
SPHINCTER ANI EXTERNUS SUBCUTANEUS
PUBO RECTALIS

g 1.—Diagrammatic representation of the portions of external sphincter Note the vertical levels of the various parts cannot be shown for s see vertical section (Fig 2)

e levator ani forms a strong muscular cylinder cling the longitudinal muscle, the internal cter ani and, below this level, the anal canal nsists of layers of superimposed fibres, and in ost differentiated form three portions are dis ishable (Figs 1 and 2) In some cases there are two separate portions—the two deeper layers then inseparable. The three layers are named below upwards —

1 Sphincter ani externus *subcutaneus*
2 " " " *superficialis*
3 " " " *profundus*

irst and third portions are annular muscles not hed to the coccyx, and supplied by the inferior rrhoidal nerve from the third and fourth sacral s. The second portion is elliptical in shape hed to the coccyx, and supplied by the perineal h of the fourth sacral nerve Fibromuscular prolongations of the longitudinal muscle of the n lie between the three portions The first on situated below and in the same plane as the al sphincter surrounds the anal canal alone econd and third parts encircle the longitudinal le and internal sphincter ani (Fig 2)

Sphincter ani externus subcutaneus – This muscle annular band directly encircling the lowest on of the anal canal (Fig 9). It is easily seen and felt beneath the skin of the anus and lies in the same plane as the internal sphincter, from the lower border of which it is separated by an annular band of fascia the *anal intermuscular septum* Posteriorly the fibres do not reach the coccyx, but decussate freely with their fellows of the opposite side Anteriorly the fibres also decussate but a few unimportant strands may be traced in dissections into the scrotum forming a rudimentary retractor scroti In the female this part of the muscle is well developed and a few fibres may become continuous with the sphincter vaginæ of the same and opposite sides

(2) The *sphincter ani externus superficialis* is an elliptical muscle lying between the subcutaneous sphincter ani below though on a more lateral plane and the deep part of the sphincter ani externus above (Figs. 1 and 2) Fibromuscular septa, prolongations of longitudinal muscle intervene between these portions The superficial external sphincter surrounds sphincter ani internus in its middle and lower part as well as the intervening downward anal prolongation of longitudinal muscle of the rectum This muscle is the only layer of the sphincter ani externus attached to the coccyx and is therefore referred to as the coccygeal part of the sphincter ani externus This attachment to the vertical column represents the primitive arrangement of the whole of the sphincter ani externus In the case of the other two parts the caudal attachment has disappeared

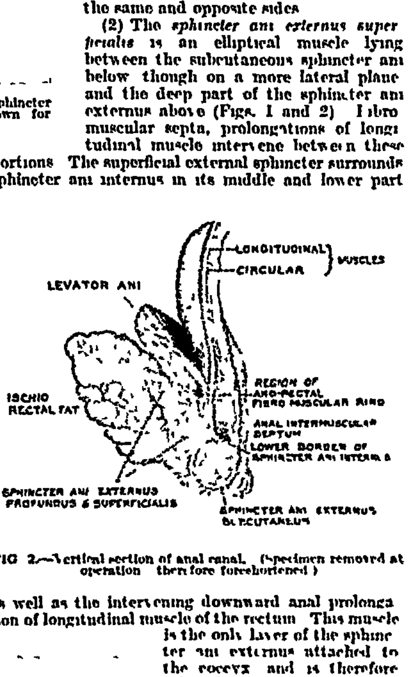

LONGITUDINAL
CIRCULAR
MUSCLES
LEVATOR ANI
ISCHIO RECTAL FAT
REGION OF ANO-RECTAL FIBRO MUSCULAR RING
ANAL INTERMUSCULAR SEPTUM
LOWER BORDER OF SPHINCTER ANI INTERNUS
SPHINCTER ANI EXTERNUS PROFUNDUS & SUPERFICIALIS
SPHINCTER ANI EXTERNUS SUBCUTANEUS

FIG 2.—Vertical section of anal canal. (Specimen removed at operation therefore foreshortened)

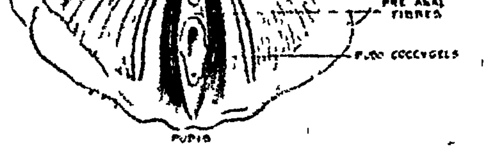


FIG 3 —Diagram of levator ani (sphincter [illegible] not shown)

Posteriorly the muscle arises mainly by aponeurotic and muscular fibres from the dorsal aspect of the terminal piece of the coccyx, and also from the ano-coccygeal raphe The muscle divides into two halves which become broader as they pass forwards embracing the sphincter ani internus and longitudinal muscle. Anteriorly the fibres are chiefly inserted into the central point of the perineum, but some fibres pass superficially to the skin, some are continuous with the bulbocavernosus or sphincter vaginæ, and not infrequently fibres extend outwards to the tuber ischii

(3) The *sphincter ani externus profundus* (Figs. 1 and 2) is the upper division of the external sphincter ani, and consists of an annular band of some thickness, in contiguity with the puborectal fibres of the levator ani in the posterior half of its circumference Its upper margin is not defined, except in its anterior half, for the posterior fibres intermingle with those of the puborectalis The lower margin is in close contact with the sphincter ani externus superficialis, but sometimes separated from it by a fibrous septum, a prolongation of the longitudinal muscle The sphincter ani externus profundus encircles the anal prolongation downwards of the longitudinal muscle of the rectum and the upper part of the internal sphincter ani, in this order from without inwards Behind the rectum the fibres of the two sides are continuous, having no attachment to the coccyx Anteriorly the fibres pass to the opposite side and are attached to the ascending ramus of the ischium, representing the transversus perinei, which muscle is closely connected with the sphincter ani externus profundus. Other fibres pass uninterruptedly to the opposite side, while in their midst is placed the fibrous tissue constituting the perineal body.

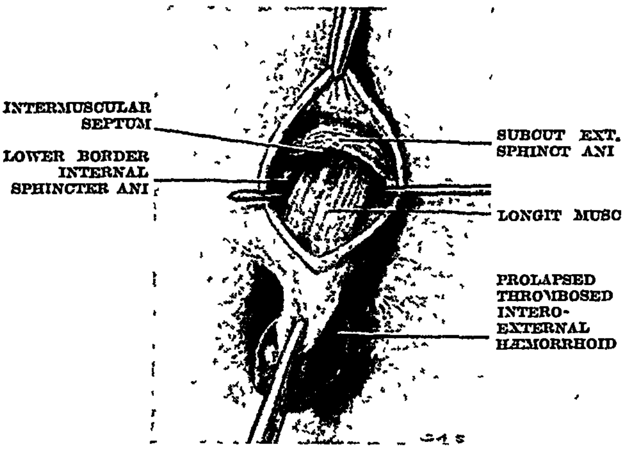

INTERMUSCULAR SEPTUM
LOWER BORDER INTERNAL SPHINCTER ANI
SUBCUT EXT. SPHINCT ANI
LONGIT MUSC
PROLAPSED THROMBOSED INTERO-EXTERNAL HÆMORRHOID

FIG. 5 —Relationships and terminal attachments of longitudinal muscles of anal canal

THE LEVATOR ANI

This muscle may be divided into three portions (Figs. 3 and 4).

1. The *iliococcygeus* arises from the ischial spine and from the posterior part of the white line It is inserted into the coccyx and the anococcygeal raphe It is usually thin and may only be represented by fibrous tissue, a fact repeatedly confirmed at operation It must be regarded as a degenerating muscle whose primary function, flexor of the tail, has been lost.

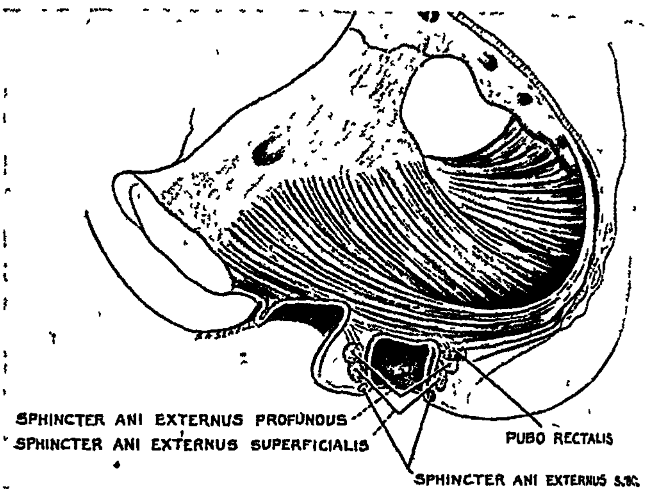
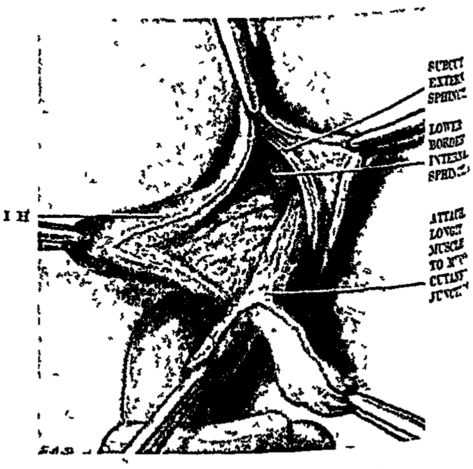

SPHINCTER ANI EXTERNUS PROFUNDUS
SPHINCTER ANI EXTERNUS SUPERFICIALIS
PUBO RECTALIS
SPHINCTER ANI EXTERNUS S

FIG. 4 —Diagram of levator ani (lateral view)

It has no physiological connexion with the and anal canal. An accessory slip of the portion, because of its attachments, is named the *iliosacralis*

2 *The pubococcygeus* —These fibres arise back of the pubis and from the anterior obturator fascia, and are directed horizontally along the side of the rectum, at level than the puborectalis The muscles sides join behind the rectum and form a lying on that formed by the iliococcyge portion of the muscle exerts no influence rectum.

3. *Puborectalis.*—This muscle, so rectal function, arises from the back of the part of the symphysis pubis under cover of the coccygeus and from the upper layer of the ligament, as well as from the pubis adjacent to the symphysis From this fibres pass backwards and also downwards lower and lateral aspect of the rectum, fibres from the opposite side behind the anal so forming a powerful loop or girdle, which anorectal junction to the symphysis pubis. these fibres reach the coccyx. In man they profoundly modified. They have lost their



I H = INTERN HÆMORRHOID

FIG. 6 —Attachments and relations of terminal longitudinal muscle.

he caudal vertebræ and have come into close
ct with the rectum. Holl refers to the pubo
lis muscle as the best developed muscle in the
diaphragm—a fact convincingly demonstrated
g perineal excision of the rectum and clinically
rmed by palpation Its lower border is intimately
hed to the external sphincter ani profundus
2) Between these sling fibres and the anal
are the downward prolongations of the longi
al muscle of the rectum and the sphincter ani
nus. A few weak interlocking muscular fibres
in front of the anal canal The puborectalis
t the junction of the rectum and the anal
, and is a well-defined locality which can
dentified with the trained examining finger
13)

e levator ani is supplied by (1) a branch of the
h sacral nerve to the pelvic surface, representing
ail portion, and (2) branches of the internal
from the third and fourth sacral to the
nal surface representing the sphincter portion

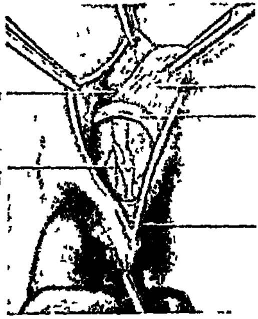
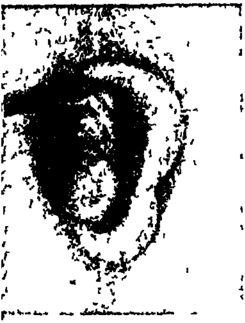

SUBCUT EXT SPHINCT ANI
SUBMUCOSA WITH SUP HÆMORR. VESSELS
CUT AND RETRACTED LONGIT MUSC.
LOWER BORDER INT SPHINCT ANI
PROLAPSED THROMBOSED INT EXT HÆMORRHOID

FIG 7.—Relationships of longitudinal muscle of anal canal to hæmorrhoids and sphincters



8.—Left thrombosed intero-external emorrhoid Retractor opens up sulcus le to attachment of longitudinal uscle

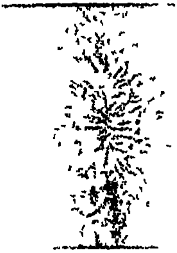


FIG 9.—Showing subcutaneous external sphincter encircling anus

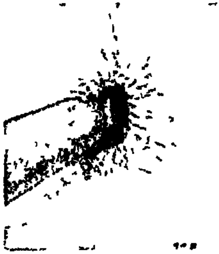


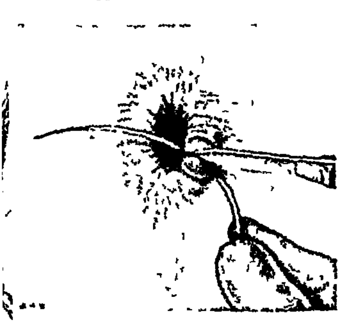
FIG 10.—Showing lower border of internal sphincter subcutaneous sphincter ani externus retracted with finger

LONGITUDINAL MUSCLE OF THE ANAL CANAL

is muscle is the prolongation of the external
ular coat of the rectum surrounding the anal
At the upper end of the anal canal it at once becomes fibromuscular, blending in its posterior half with the puborectalis which lies exteriorly and also with the external sphincter ani profundus in its anterior half, where the puborectalis has left the anal canal. It thus takes its share in the formation of the *anorectal ring* In dissections it can then be traced downwards enveloping the sphincter ani internus, but in its turn it is embraced by the deep and superficial external sphincter in this order.

The longitudinal muscle ends by dividing into two or sometimes into three fibromuscular septa, which separate and ensheath the various portions of the external sphincter ani The septum between the deep and superficial external sphincter, if present, traced outwards becomes lost in the ischiorectal fat. That below the superficial external sphincter is also lost in the ischiorectal fat, but [illegible] more superficially than the previously described septum. The septum, which is a continuation of the muscle downwards, has important connexions It passes between the lower border of the internal sphincter ani and the upper border of the subcutaneous external sphincter ani, forming the anal intermuscular [illegible] which is attached in a narrow [illegible] ring to the skin of the anus in the region of the [illegible] cutaneous junction (figs 5 7)

It may here be mentioned that the [illegible] termination of the longitudinal muscle [illegible] ing bearing on the pathology and [illegible]

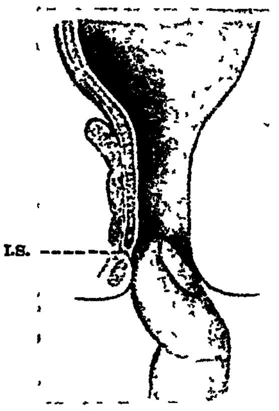


11.—Technique of division of subcutaneous external cter. Needle is inserted at the upper border of muscle emerges at intermuscular septum anal canal. The constant well-known positions of main tracks and openings of fistulæ into the anal canal will be seen to have definite relations to the septa of the longitudinal muscle, suppuration spreading by direct extension along these tissue planes (Fig. 15) Furthermore, the attachment of the termination of the longitudinal muscle to the mucocutaneous junction explains the presence of the sulcus in intero-external prolapsed and thrombosed piles (Fig. 8) This sulcus in some cases is ⅜ in. deep, but varies in depth according to the "degree" of the prolapse. The extravasated blood clot distends the loose mucous membrane of the pile above and also the elastic subcutaneous tissue below the attachment of the muscle The intervening covering of the compound and thrombosed prolapsed pile is held down tightly by the longitudinal muscle and a sulcus of varying depth between the distended internal pile above and the external pile below results

W. S. Perrin has pointed out that in non-prolapsing internal hæmorrhoids ("first degree") there is a firm subjacent attachment with a groove at the mucocutaneous junction, fixing, as it were, the hæmorrhoid at this point and thus preventing prolapse This is the cutaneous attachment of the longitudinal muscle of the anal canal. It has been observed in dissected specimens obtained by perineal excision of the rectum, demonstrated in cases of thrombosed intero-external prolapsed piles and also during the operation of hæmorrhoidectomy in piles of the second and third degree. Microscopic sections of the fibromuscular attachment have been prepared and examined by Dr. Cuthbert Dukes.

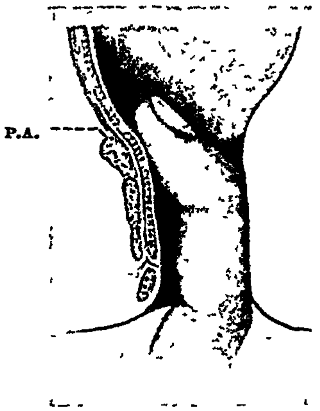
Reference to the drawings (Figs 5–7) will show the relationship of the terminal septum of the longitudinal muscle

In our opinion it can have little, if any, practical bearing on the causation of stricture formation following the "stripping-up" and similar operations for hæmorrhoids. Yet it is worthy of note that if the incision or groove for the ligature is made in the mucous membrane, the muscle attachment lies below and is not included in the ligature, but should the incision at the base of the pile be made through the skin into the subcutaneous tissue the intermuscular septum is included in the strangulating ligature.



I.S. = INTERMUSCULAR SEPTUM.

FIG. 12—Palpation of intermuscular septum Middle of distal phalanx at level of anus.



P A = POSTERIOR PART OF ANORECTAL RING

FIG. 13.—Palpation of posterior part of anorectal ring Proximal interphalangeal joint at level of anus.

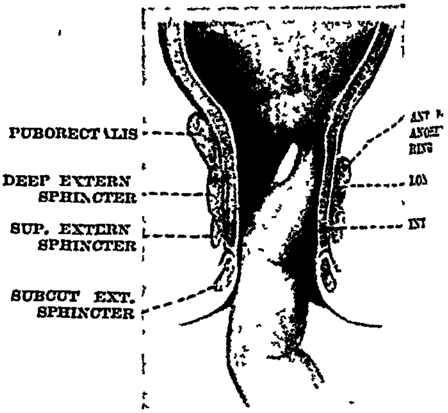


FIG. 14—Palpation of anterior part of anorectal ring Middle of second phalanx at level of anus.

SPHINCTER ANI INTERNUS

The *sphincter ani internus* (Fig. 2) is a t or cylindrical muscle encircling almost the length of the anal canal Its well-defined, thickened, and easily palpable lower edge is short of the lower end of the anal canal, which is completed in this plane by the subcutaneous sphincter ani below (Fig. 10) The intermuscular septum intervenes between the muscles. The sphincter ani internus is a continuation of the circular muscle wall of the into the anal canal. Though the circular much thicker in the anal canal, it does not narrow annular band or ring so often dep diagrams. Nor is it the sole guardian of The *composite anorectal ring* has this function. The inner surface is covered with membrane separated from it by the subm which run the hæmorrhoidal vessels Th surface from above downwards is separated ensheathing thin fibromuscular prolongation longitudinal muscle from the puborectalis, the sphincter ani profundus, and the external sp ani superficialis

The *anal intermuscular septum* (Figs 2 occupies the interval between the lower border internal sphincter ani and the upper margin subcutaneous external sphincter ani and encircles the anus It is easily palpated as a de or groove about ¼ in. to ⅛ in in breadth, sur the anal canal just inside the verge immediately under the skin and is produced downward fibromuscular prolongation of the tudinal muscle of the rectum.

The anal intermuscular septum is an im landmark in the anal canal, for it marks the limit of the subcutaneous sphincter ani ex This landmark is helpful in operations to di muscle, for a tenotomy knife entering the at this point from without and cutting dow divides the subcutaneous external sphinct conditions of tight anus or recurring fissure or, as in Fig. 11, a needle technique may be em

It is at the anal intermuscular septum that the track of most fistulæ reaches the submucous either travels up the anal canal submucously he muscles or actually perforates the mucous ibrane and enters the anal canal at this point ares of the mucous membrane overlie the sub- neous external sphincter ani and the inter- cular septum, but rarely extend above this level

his anatomical description is based on dissections, ons of anal canals removed at operation, clinical surgical observations, all stimulated by the llent monograph, "The Myology of the Pelvic r," by the late Peter Thompson, to whose work would humbly and admiringly pay our tribute, gratefully acknowledge our indebtedness Prof I Woollard has given us invaluable advice and uragement

Palpation and Recognition of the Anal Musculature

ae *sphincter ani externus subcutaneus* (Figs 2, nd 10) is easily palpated and recognised in its le extent as a round or occasionally elliptical l situated at the anal verge immediately under skin It is about a quarter of an inch in thickness lower and outer margin can be definitely felt r the skin and is related to the elastic and pliable orectal fat of each side. At its upper and inner , equally definite to the touch, there is a well- ked depression, a quarter to an eighth of an inch encircling the canal called the *anal intermuscular im* This separates the muscle from the easily gnised lower rounded edge of the internal sphincter h itself reaches to within a quarter of an inch he anal verge The sphincter ani externus sub- neous is the only part of the external sphincter, h is subcutaneous and directly palpable through- It is unessential as far as sphincteric function ncerned and can be safely divided in any direction ut away in any manner, the patient being nscious of the loss Indeed, much benefit ws the deliberate division of this muscle when ght anus is associated with troublesome ptoms, It is often erroneously referred to diagrammatically drawn as the whole of the ncter ani externus. In the majority of cases the track of fistulæ runs into the anal canal in close ion to this muscular bundle, either below and utaneously, or above and through the inter- cular septum (*low level anal fistula*) (Fig 15 A), separating the subcutaneous portion of the cle from the rest of the external sphincter and rnal sphincter lying above So it is frequently led by the surgeon in dealing with fistulæ This cle forms part of the base of the ulcer and is ficially divided for the surgical treatment of re in ano

he *lower border of the internal sphincter* can be ated as the rounded upper boundary of the rmuscular septum encircling the anal canal extends below the muco-cutaneous junction to in about a quarter of an inch of the anal verge ne sphincter ani externus subcutaneus be retracted vards with the finger, the lower border of the rnal sphincter can be demonstrated as it closes anal canal in its lower part (Fig 10)

the *anorectal ring*, as its name implies, is situated he junction of the anal canal and rectum It is id to be a composite fibromuscular band composed he upper portion of (*a*) the internal sphincter, he longitudinal muscle (*c*) the puborectalis and the external sphincter ani profundus muscles palpating finger in the anal canal by withdrawing inserting with pressure at this point should tify this ring with precision (Figs 13 and 14).

The posterior half of the ring is easily defined because of the participating prominent sling like fibres of the puborectalis portion of the levator ani The puborectalis, if followed forwards and upwards from behind with the rectal palpating finger, can be traced leaving the anorectal ring on each side of the anal canal to find insertion into the posterior surface of the pubic bones near the symphysis pubis

The internal sphincter and the longitudinal muscle surrounded by the deep portion of the external sphincter encircle the anterior half of the bowel and here complete the ring An anterior U shaped deficiency is left by the departing limbs of the puborectalis sling The internal and deep external sphincters here cannot be felt as separate muscles, but as a composite flat band The anterior half of the ring, with the upper border of the deep external sphincter, though not so distinct as the posterior half of the ring, can be detected with the palpating finger and often confirmed by simultaneous bidigital palpation of the rectovaginal septum through vagina and anal canal It should be pointed out that the sphincter ani internus can only be recognised apart from other sphincter muscles at its lower edge near the anal verge It lies, however, immediately under the mucosa and is palpated along almost the whole *length of the anal canal*

On withdrawing the long tubular rectal speculum from the air distended rectum to the anal canal, the anorectal ring contracts as the end of the speculum reaches the junction, and a narrow ring of mucous membrane appears The highest portion of the internal hæmorrhoidal plexus lies just above the anorectal ring and therefore, in the sclerosing treatment of hæmorrhoids, the needle should be inserted into the submucosa at or just above the level of the ring, where the mucous membrane is insensitive to painful stimuli.

It is suggested that the whole of the external sphincter is rarely cut in the treatment of fistula Where continence remains, only the subcutaneous sphincter with sometimes the superficial, and perhaps a portion of the deep part, are divided So intimately is the deep portion of the external sphincter connected with the puborectalis muscle that it would be difficult deliberately to cut the former without injuring the anorectal ring upon which control depends In the anterior half of the anorectal ring the deep external sphincter alone stands as the last guardian of continence

In complete rupture of the perineum in women the anterior part of the anorectal ring is completely severed and loss of control results the posterior part of the ring together with the puborectalis often remaining intact It is a matter of common experience to the proctologist that he can be less bold with division of sphincter muscles in the anterior half of the circumference of the anal canal because of the shortness of the anal canal in front This is due to the absence of the sturdy puborectalis in this part of the composite anorectal ring Fortunately for their successful surgical treatment "high" level fistulous openings into the anal canal are usually situated in the posterior half of its circumference

For the confident and successful surgical treatment of fistula in ano one must be practised and skilled in palpating and recognising the anorectal ring, for whereas if this ring be cut loss of control surely results yet as long as the narrowest complete ring of muscle remains, control is preserved All the anal sphincter muscles below this ring may be divided in any manner without harmful loss of control.

ANAL MUSCULATURE WHICH CAN BE PALPATED AND RECOGNISED

1 Subcutaneous external sphincter ani throughout its whole extent
2 Anal intermuscular septum
3. Lower border of internal sphincter ani.
4 Anorectal fibromuscular ring
5 Upper border of sphincter ani externus profundus (anterior half of anorectal ring).
6 Puborectalis muscles throughout their whole extent

The palpation and recognition of the above structures in the normal rectum equips the operator with assurance and confidence in the surgical treatment of the pathological conditions affecting this part *

(To be concluded)

RETROPERITONEAL HERNIA

AN ACCOUNT OF TWO CASES

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Records of retroperitoneal herniæ are still uncommon enough to make cases worth reporting. Further, the variation in clinical manifestations, in preoperative diagnosis, in anatomical arrangement, and in possible methods of radical treatment is of considerable interest to the surgeon.

It appears that as long ago as 1742 Neubauer described a case of paraduodenal hernia; in 1844 Hüschè, in 1857 Treitz, and in 1871 Landzert put the anatomy of peritoneal fossæ in the neighbourhood of the duodeno-jejunal fossæ on a sound basis; and in 1861 Klöb described a case of internal hernia in this region in detail. Since that date there have been sporadic reports in the medical press of isolated cases, accompanied occasionally by a summary of reported cases to date But the standard work on the subject is Lord Moynihan's monograph,[1] the second edition of which was published in 1906, and the classification there adopted by him is still adhered to Apart from fossæ in the duodeno-jejunal region, of which he describes nine, mention is made of pericæcal fossæ, intersigmoid fossæ, and the lesser sac of the peritoneal cavity.

The only reasonable ætiological theory of these fossæ seems to be that they represent a partial failure in the normal developmental process known as zygosis—i e, that they are essentially "pre-formed sacs," due to a local fusion anomaly during the usual rotation of the gut

Recent summaries of cases of retroperitoneal hernia differ rather widely in the total reported to date (it seems to be about 200), but there is no doubt that the fossæ in the periduodeno-jejunal region account for the large majority of internal herniæ The two cases reported herewith come into this category.

CASE REPORTS

Case 1—A well-built young male, aged 25, single, was admitted to St. Mary's Hospital in the afternoon of June 16th, 1933 He had had a sudden attack of acute abdominal pain at noon of that day, accompanied by violent vomiting When first seen he stated that the pain had decreased very little in severity since its onset and he was retching constantly, bringing up small amounts of bile-stained watery fluid Except for so-called "nephritis" two years previously there was nothing of note in his history, and definitely no story of indigestion of any sort

On examination he was obviously shocked, pale, sweating, and restless. His temperature was 96 8° F, pulse rate 76, respiration-rate 20. There was retching every few minutes The abdomen was retracted, with marked muscle guard over the whole anterior aspect. Tenderness was chiefly supra-umbilical; there was slight dullness on percussion in the epigastrium and right hypochondrium, and a limited area of hyperæsthesia in the latter region Rectal examination was negative, as was that of the chest Urine normal.

A diagnosis of high intestinal obstruction (? cause) was made and laparotomy carried out at 6 P M on the same day—i e., six hours from the onset A 4-in right paramedian incision was made under general anæsthesia, the rectus abdominis retracted laterally, and the peritoneum opened A distended stomach and duodenum presented, there being no sign of any ulcer in this area. No free fluid in the peritoneal cavity. About 4 in. of proximal jejunum were also found distended and immobile and beyond this a further 6 in or so of small intestine were found packed into a paraduodenal fossa. This fossa looked to the right and downwards and had a well marked upper and left lateral concave border The gut was withdrawn with little difficulty from this pocket (which appeared to extend upwards into the base of the transverse mesocolon), and though showing a definite early constriction ring where it had been pressed on by this upper and left lateral sickle-shaped border, was of good colour and lustrous. Warming with hot saline packs and gentle stimulation produced no peristaltic waves, but it was decided the gut was viable The small intestine below this incarcerated loop was normal but collapsed. Examination of gall-bladder, appendix, and pancreas showed these organs to be normal in position and condition. The abdomen was closed in layers

The post-operative course of this case was featureless The temperature rose to 99° F on the day after operation, the pulse at no time exceeded 84, and vomiting ceased completely. Fluids only were given for four days, after which a gradually increasing milk diet was instituted. An ox-bile enema on the second day and a simple enema on the fourth day produced stools, and from the sixth day onwards the bowels acted spontaneously. Sutures were removed on the ninth day and the patient was discharged three weeks after admission.

Case 2—A married man, aged 30, serving in the Army, was admitted to St. Mary's Hospital at 8 30 P.M. on Sept 10th, 1933, with a history of an attack of severe abdominal pain an hour and a half previously He stated that he had had about 18 months indigestion, culminating in this crisis. He was much shocked (temperature 97 2° F, pulse 64, respiration-rate 18), cold, and clammy. The abdomen moved very little on respiration, and there was pronounced muscle guard, without true rigidity. Tenderness was chiefly in the epigastrium and to a lesser extent the left loin Urine normal; chest normal, rectal examination nil There was no vomiting in this case.

A diagnosis of perforated gastric ulcer, with the possibility of a subacute pancreatitis, was made and laparotomy carried out under light general anæsthesia at 11.30 P M—i e, five hours from the onset of pain. The abdomen was opened through a 3-in right paramedian incision. The stomach appeared normal, but the duodenum was obviously distended. There was no free fluid in the peritoneum and no sign of gastric or duodenal ulceration On raising the omentum and transverse mesocolon about 1 ft. of dilated jejunum was discovered immediately distal to the duodeno-jejunal flexure Beyond this distended loop the small intestine disappeared into a large peritoneal fossa which faced forwards and rather to the left and had a well-marked left anterior and upper border. The fossa seemed rather in the nature of a vertical slit between two layers of peritoneum, and after withdrawal of some 6 in of gut—easily accomplished—

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* In the drawings Figs 12–14 the anorectal ring and anal intermuscular septum are represented as being a certain distance measured on the palpating finger from the anus This is only approximate, for length of fingers and anal canals vary The drawings serve however as a rough but fairly constant guide to those not already familiar with the landmarks.

itted three fingers without difficulty The incarcerated was obviously viable and was placed well over to the t of the vertebral column, no attempt being made to e the fossa, in view of the patient's poor condition and fact that the anterior layer of the pocket contained veins The pancreas, gall bladder, and appendix e examined and found normal in all respects The omen was closed in layers

part from several mild attacks of upper abdominal n (resembling the patient's previous "indigestion") post-operative course was uneventful Difficulty was with in getting normal bowel action, enemas being en every second day until the tenth Fluids only were en for five days, followed subsequently by a gradually easing milk diet Sutures removed ninth day

barium meal was given on Sept 19th just previous the patient's discharge a fortnight after admission s showed "a tendency to regional gastrospasm in the pyloric zone, perhaps due to recent operative measures, definite duodenal ileus" A subsequent radiographic mination (Oct 10th, 1933) showed a normal stomach ptying in four hours, but still a minor degree of denal ileus

DISCUSSION

lassification —These cases appear to be examples left paraduodenal hernia, though it is a moot nt as to whether the term "parajejunal" as gested by Brohee, might not be more descriptive cording to Rendle Short[2] paraduodenal fossæ ount for only 2 per cent of retroperitoneal fossæ they are, on the other hand responsible for the jority of internal herniæ in this region In 1932 wille[3] summarised 140 cases of paraduodenal nia, the case under his own care being one of the e "right" type, of which he discovered 15 as npared to 105 "lefts"

natomy —The description of the paraduodenal sa as given by Cofer and Phillips[4] is as follows peritoneal fossa to the left of the ascending part the duodenum, having the inferior mesenteric n above the left colic artery to the left, a mesocolic d below, and the mesentery of the small intestine the right Further important relations might be ntioned in the pancreas above, the left renal vein low, the aorta to the right, and behind beneath posterior peritoneum, the psoas muscle renal ssels, and possibly left ureter and kidney

The important anatomical fact with regard to raduodenal hernia is that the anterior wall of the sac" is a fold of peritoneum raised by the inferior senteric vein to which it forms a small mesentery the "plica venosa" of Phillips.[5] (This was present both the above cases being particularly obvious the first) Thus the inferior mesenteric vein really s in the neck of the sac—an important point in nsidering treatment

Clinical picture —Short[2] pointed out that these ses fall into three main clinical groups the cases sudden acute intestinal obstruction (as in Case 1) ose of repeated attacks of subacute obstruction Case 2 as evidenced by 18 months history of current attacks of "indigestion"), and, lastly ose presenting simply an abdominal tumour In cases reported palpation was negative in both stances Both patients were males and the ndition appears at least twice as commonly amongst en The average age incidence is about 35 both ported cases being rather younger than usual

Diagnosis —Pre operative diagnosis is very difficult these cases, a perforated peptic ulcer being the mmonest mistake This is particularly so in ose with a previous history of dyspepsia The eater tendency to vomiting—and especially repeated ding—may be of help as in Case 1

The duodenal ileus of Case 2, as shown by the repeated radiographic examinations at a later stage, suggests a possible means of pre operative diagnosis in cases that are not too acute when first seen Further it would seem that recurrent subacute herniation into a peritoneal fossa may be a possible factor, I should think usually overlooked, in the ætiology of duodenal ileus Harris[6] reports a case of right paraduodenal hernia (into the mesenteric fossa of Waldeyer) as giving rise to ileus I had thought Case 2 was a hernia of this type but I feel it is rather an atypical "left," since the opening certainly did not look directly to the left and did not contain the superior mesenteric vessels

Treatment is either by simple reduction as in the two cases reported, or by reduction plus repair The latter is of course the more desirable method, but two facts seem to suggest conservative measures as the wiser course to pursue The "sac" is really a false sac in the sense that it is simply two separated peritoneal layers rather than a peritoneal protrusion and therefore difficult to remove in toto, and again the immediate and intimate relations of the "sac" make the possibility of serious hæmorrhage (especially from damage to the inferior mesenteric vein in the neck and anterior border) in any radical operative technique extremely probable The literature provides examples of both lines of treatment—the majority undoubtedly being in favour of simple reduction

Prognosis —The mortality rate in these cases is very high In Moynihan's[1] series of 100 cases of retroperitoneal herniæ in general, it was 80 per cent At the time of Short's[2] report in 1925, he described 43 cases of paraduodenal herniæ with a mortality rate of nearly 40 per cent The "left" type is less fatal than the "right"

Recurrences of an acute or subacute type are reported in cases where operation has consisted simply of reduction, but the fact that a large proportion of retroperitoneal herniæ reported have only been discovered by chance at autopsy seems to show that only a small minority tend to become acute abdominal emergencies

In the two cases reported follow up reveals that the first patient has since been operated upon and a chronic appendix removed at another hospital after a preliminary X ray examination which showed cæcal stasis but no abnormality in the upper abdominal shadows Unfortunately no reply has been elicited from the patient himself since

The second patient is at work, hard manual labour now and writes that he is "many times better since the operation" He states that he is much stronger eats a greater amount and variety of food and has not once had a repetition of pain or vomiting His only complaint is obstinate constipation, despite which he claims to be "a different person altogether"

I should like to thank Mr R M Handfield-Jones on whose behalf I dealt with these cases, for his permission to publish this report

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A COMBINED STUDY OF THE BASAL METABOLISM AND IMPEDANCE ANGLE IN THYROTOXICOSIS AND MYXŒDEMA

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The "impedance angle," an electrical property of the body, has recently been studied and measured by Brazier.[1,2] In normal subjects the impedance angle (or I A) showed a well-marked sex difference. The mean for males was found to be 0 138, with a normal range of 0 127 to 0 151; for females the mean value was 0 111, with a normal range of 0·121 to 0 100.

A study of this property in thyrotoxicosis by Brazier,[2] showed that much deviation from normal occurred. Values of I A. were found in nearly all cases to be far outside the standard deviation—i e., 0 07, for example, in a severe female case, as against the normal of 0·111. Brazier converted the readings obtained into clinical units, in order to simplify matters. Thus, if the subject were female (normal reading 0 111) and her I A. reading 0 070.

Clinical units =(normal minus reading) × 1000.
=(0·111 minus 0 070) × 1000.
=+41.

Further work[3] showed that the I A could be altered by thyroid extract and by thyroxine Her general conclusions were that the I A "forms a very reliable aid to the diagnosis of toxic conditions of the thyroid gland. In this respect it is more specific and more certain than the basal metabolic rate"[3]

PRESENT INVESTIGATION

It was decided to extend the observations made by Brazier and to make, at the same time, further observations on such work as she had reported. Basal metabolic rate (B M.R) and I A. values were studied simultaneously in the following cases: (1) eight consecutive cases of typical Graves's disease, before and after iodine therapy; (2) four consecutive cases of typical Graves's disease before subtotal thyroidectomy, and about 14 days afterwards; and (3) two cases of myxœdema before and after treatment with thyroid extract

The B.M.R was determined under standard conditions by means of the Benedict-Roth apparatus with kymographic attachment The error for the determination is known not to exceed 2 per cent. The standards of Aub and Dubois were employed

Preliminary investigations showed that the I A. is unaffected by posture and does not alter over a period of one hour—the time taken for determination of both B M R and I A. The latter measurements were made by the standard Brazier bridge (kindly supplied by Messrs Gambrell) It was found necessary to control, in addition to the volume, concentration and temperature of the saline in the arm baths, the position of the baths and of the immersed electrodes

RESULTS

The results are presented in three Tables.

The results shown in Table I indicate that in these cases of severe Graves's disease the I.A was definitely altered (as was the B M R), from the mean of normal subjects After the administration of iodine the B M R. fell, as did the pulse-rate The fall was associated with an obvious clinical improvement of the patient, but the I A was practically unaltered (It must be noted that in our experience cases of moderate Graves's disease often show I A values which are well within abnormal limits, and that roughly one-third of normal female subjects show I A. values which are within the limits given for thyrotoxicosis.. This will be reported on separately.)

TABLE I.—*Cases of Graves's Disease Before and After Iodine (180 mg. daily)*

FEMALES

Case	METABOLIC OBSERVATIONS				IMPEDANCE ANGLE, ϕ				BASAL PULSE-RATE per minute	
	Before iodine.		After 8–14 days iodine		Before iodine.		After 8–14 days iodine			
	O_2 consumption per min. in c cm.	B M R.	O_2 consumption per min in c cm.	B M R	Angle ϕ.	Brazier units.	Angle ϕ.	Brazier units	Before iodine	After 8–14 days.
1	240	+23	181	− 3	0 091	+20	0 092	+19	86	68
2	259	+46	227	+28	0 096	+15	0 093	+18	106	88
3	193	+34	151	+ 5	0 074	+37	0 079	+32	110	102
4	378	+91	254	+31	0 056	+55	0 060	+51	122	106
5	200	+17	162	− 4	0 080	+31	0 080	+31	76	60
6	238	+31	196	+11	0 072	+39	0 076	+35	98	72
7	233	+29	181	+ 2	0 081	+30	0 082	+29	108	100
8	244	+61	202	+32	0 097	+14	0 096	+15	134	94

TABLE II—*Cases of Graves's Disease Before and Shortly After Subtotal Thyroidectomy (Thyr)*

FEMALES EXCEPT CASE 9

Case.	METABOLIC OBSERVATIONS				IMPEDANCE ANGLE ϕ				BASAL PULSE-RATE per minute	
	Before op. and iodine		9–14 days after thyr		Before op and iodine		9–14 days after thyr			
	O_2 consumption per min in c cm	B M R	O_2 consumption per min in c cm.	B M R	Angle ϕ.	Brazier units	Angle ϕ	Brazier units	Before operation	After operation
1	240	+23	181	−7	0 091	+20	0 094	+17	86	76
2	259	+46	178	0	0 096	+15	0 096	+15	106	58
3	193	+34	131	−9	0 074	+37	0 084	+27	110	82
9	293	+30	209	−6	0 112	+26	0 114	+24	94	58

The second or post-operative readings on these patients (Table II) were taken from 9 to 14 days after subtotal thyroidectomy. No iodine had been ministered before the initial reading was taken, t all cases were given iodine prior to the operation can be seen that shortly after subtotal thyroidtomy the B.M R has fallen to within normal its, but that this was not associated with any nge in the I A

Of those shown in Table III Case 10 was a well rked case of "spontaneous" myxœdema which s treated by means of thyroid (B P 1932) grs 2 b d teen days elapsed between the initial reading and

BLE III—*Cases of Myxœdema Before and After Thyroid*

FEMALES

METABOLIC OBSERVATIONS				IMPEDANCE ANGLE φ				BASAL PULSE RATE per minute	
Untreated		After thyroid		Untreated		After thyroid			
O_2 consumption per min in c cm	B M R.	O_2 consumption per min in c cm	B M R	Angle φ	Brazier units	Angle φ	Brazier units	Untreated	After thyroid
140	−30	225	+ 7	0 103	+8	0·099	+12	52	76
151	−23	235	+23	0 115	−4	0 115	− 4	72	110

e second here recorded Case 11 was one of post erative myxœdema and received thyroid (B P 1932) s. 4 t d s. for six days with a view to producing a pid elevation of B M R It can be seen that in the o cases of myxœdema studied, the I A is not tside the normal limits, while the B M R reflects e clinical myxœdematous state After thyroid edication, clinical improvement took place, asso ated with a rise in B M R but without alteration the I.A

The dissociation, shown in the cases here recorded, tween B M R and I A is also evident from a study the effects of severe exercise When this is carried t to the point of exhaustion it may elevate the ygen consumption by 200 per cent or more and ly produce a slight change in the I.A The remark le constancy of the I A with marked alteration of e thyroid state suggested an investigation of it before d after death No significant change was noted in e I A readings of cats in experiments of this kind

These results show that little or no change takes ace in the I A values in spite of great alteration of e clinical state in thyrotoxic patients They suggest at any change which takes place in these values s a result of treatment is too slow to be of clinical use

SUMMARY

(1) In eight consecutive cases of typical Graves's sease, the impedance angle (I A) was found to be tside the normal limits in the direction indicated y Brazier

(2) In these eight cases pre-operative iodine medica on caused no alteration of the impedance angle though this treatment produced in all of them nical improvement, fall in pulse rate, and fall in sal metabolic rate

(3) In four cases of Graves's disease studied before d 0 to 14 days after subtotal thyroidectomy, no teration was found in the I A , although the opera n was followed by a fall of B M R and pulse-rate d by clinical improvement

(4) In two cases of well marked myxœdema the I A was found to be normal. Treatment with thyroid extract produced no alteration in the I A.

(5) Exercise to the point of exhaustion, producing an increase of 200 per cent in O_2 consumption, increased the I A only by 10 Brazier units (i e., about 7 per cent).

(6) In cats there is no significant change in the I.A after death

(7) It appears from these results that determination of the impedance angle is of no value in assessing the clinical progress of cases of Graves's disease or myxœdema

Thanks are due to the honorary staff of the Middlesex Hospital for permission to examine their cases, and to Dr M A B Brazier, Prof E C Dodds, Mr Olmwood of Gambrell Bros , and Prof Samson Wright

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Clinical and Laboratory Notes

CAVERNOUS ANGIOMA OF THE VERTEBRA

By Mary F Lacey, M B, Liverp
RESIDENT MEDICAL OFFICER SMITHDOWN ROAD HOSPITAL, LIVERPOOL AND
E Seymour Smith, M B Liverp
DEPUTY MEDICAL SUPERINTENDENT OF THE HOSPITAL

A SCHOOL teacher, aged 47, was admitted to the Smithdown road Hospital with a history of complete loss of power in both legs for 26 years Up to the age of 21 she had been perfectly healthy and the onset of the condition was probably gradual from this time

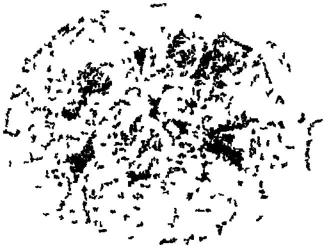

FIG 1—[illegible]

Investigation revealed no further complaint and no etiological factor could be traced

On admission the patient was unable to stand, but the general nutrition was quite good, except for slight anæmia and some history of indigestion The central nervous system alone showed any material abnormality and here there was clear evidence of a degenerative process of the [illegible] [illegible] muscular atrophy with contractures [illegible] in the lower extremities The cranial nerves were normal, the arm-jerks and abdominal reflexes were present and equal on both sides, the knee- and ankle-jerks were absent, and there was a bilateral extensor plantar response. Ankle-clonus was also bilateral. From the level of the ninth dorsal vertebra there was complete loss of pain and tactile sensation There was complete incontinence of urine, but the anal sphincter was not involved

The blood and cerebro-spinal fluid Wassermann reaction were negative as was the reaction to Lange's gold sol

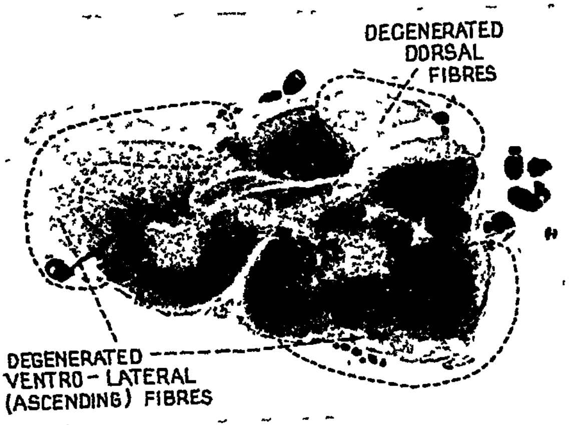

FIG. 2 —Ascending degeneration above the lesion (×7 5)

There was no increase in cellular elements, and no alteration in the protein and sugar contents

An X ray examination of the spine was made and a tentative diagnosis of hæmangioma of the ninth thoracic vertebra arrived at A macroscopic examination showed the usual irregular absorption of the bony trabeculation with a large swelling extending to either side of the adjacent upper vertebra and to the lower limit of one vertebra below. The outline of the swelling was clearly defined, and in its substance a fine network of bony trabeculation enclosing large cystic spaces was seen

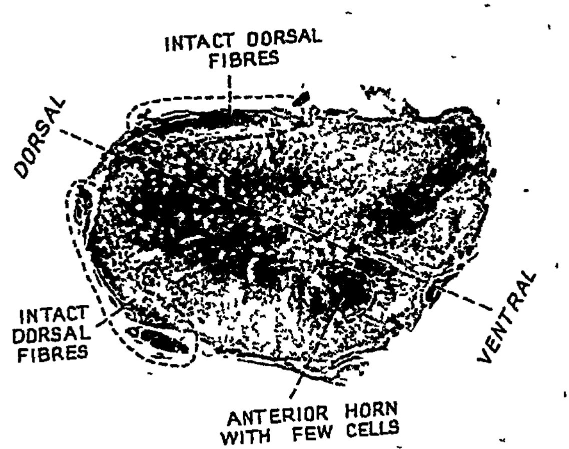

FIG 4 —Extensive degeneration below the lesion, and it is obvious that there has been considerable pressure, for the dorsal columns are affected as well as the descending fibres Even the anterior horn is affected and there are few cells left There are still some relatively healthy ascending fibres in the dorsal region (×7 5)

The patient died four months after admission to hospital, and sections of the tumour taken at the autopsy revealed the typical microscopic characteristics of a cavernous angioma (Figs 1–5).

Ewing[1] reports a similar case, and Nattrass and Ramage[2] quote 11 cases as having been reported before 1927, the first noted being that by Virchow in 1862–63. In 1929 Bailey and Bucy[3] of Chicago put the number of cases as 27 described up to that date

The one now reported varies in many findings from those mentioned, but in the serological examinations there is almost no difference It is unfortunate that the antecedent history of this patient is not available, but it seems to be established that from the time the illness was recognised there was no remission and the symptoms of compression persisted and increased. Whether there was an early remission, as in the case of Bailey and Bucy, or whether the onset was gradual as reported by Nattrass and Ramage, it is impossible to say; but with a history of 28 years of inability to walk one feels that the probability lies with a gradual onset The duration of the condition is of interest, and the contractures and muscular atrophy suggest a slow but steady development

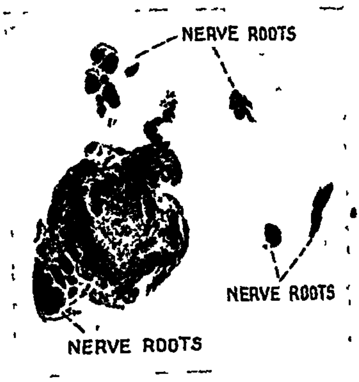

FIG 3 —Nerve roots which are all that is functional at the level of the lesion. (×7 5)

Fæcal incontinence was absent in this case, which is not in accord with other reports, although Connell and Hay[4] instance a similar condition in which a sensation of fullness of the rectum was experienced prior to incontinent defæcation In every patient control of the bladder is reported to have been absent

The age of onset, in the early twenties, is interesting, and is probably one of the earliest reported Other

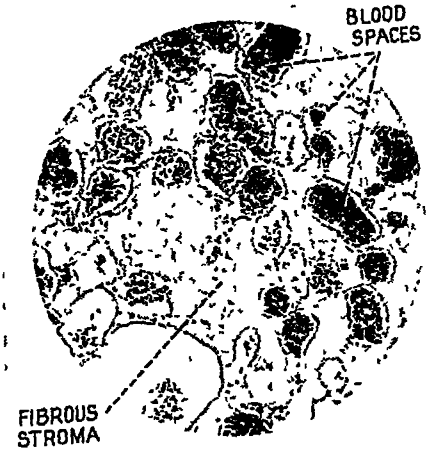

FIG 5 —Cavernous angioma showing large intercommunicati spaces filled with blood (×80)

records show the ages of recent cases as being betwe the age of 50 and 62 years

We wish to acknowledge our indebtedness to D John P Steel, medical superintendent of the hospit for permission to publish an account of this case.

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TERATOMA OF THE TESTICLE

ASSOCIATED WITH REPEATED INJURY AND WITH MISPLACEMENT

By JOHN SPENCER, M R C S Eng , D P H
THOLOGIST TO THE KING GEORGE HOSPITAL ILFORD AND TO THE EAST HAM MEMORIAL HOSPITAL

TERATOMATOUS new growths of the testicle are common , they are never uninteresting This case reported because it presents features that make it re than usually interesting

The patient, aged 20, was admitted to hospital on rch 2nd 1932 In November, 1931, he had received a w on the left testicle whilst playing football His barrassment was only temporary and he continued ying on that and subsequent days Six weeks after s injury he had received a second blow from a tennis ll and experienced severe pain and discomfort He was rned home During transit the testicle swelled rapidly d was painful and tender Local treatment slightly luced the swelling which then remained at a constant el Several weeks later he had jolted and strained nself whilst getting on a moving tramcar The swelling d discomfort returned Two ounces of blood were withawn by his local practitioner who sent him to hospital der a diagnosis of hæmatocele

Previous history —The patient reported an attack of ricella earlier in 1931, but could remember no event ated to his testicle His father, on being questioned sequently, reported that when the boy was 8 years it was discovered that the left testicle had not descended o the scrotum Under repeated manipulative treatment came to rest in its normal situation

On examination the boy looked healthy but had a nperature of 101° and a pulse rate of 110 The left side the scrotum was swollen, reddened and tender The lling was tense, non fluctuant and non translucent re was a complaint of pain in the left buttock which liated down the left leg to the knee There were no lpable glands in the abdomino inguinal region and no nary symptoms The Wassermann reaction was ative

On March 22nd, 1932, when the temperature and pain l subsided the swelling was explored It was found to solid with growth fungating through the capsule in o places The left testicle was removed There was no empt at a radical operation The tumour was soft iltrated with pus, and of a mushy consistency

Macroscopic examination —The growth measured 5 5 cm le by 7 5 cm long , in two places the growth had broken ough the visceral tunica Centrally the tumour was remely necrotic and friable, with areas of suppuration ipherally the growth was more solid but still soft and ly broken down Several small cysts were visible morrhagic and necrotic areas could still be found and re were suggestions of cartilaginous change

Microscopic examination —The growth presented the tures of a teratoma with proliferating epithelial elements e arrangement of the cells varied widely Adeno nomatous areas with columnar cells gave place to d columns of polygonal and spheroidal cells which ran tissue spaces The central part of these columns of cells s undergoing degenerative and necrotic changes (This ange is consequent upon faulty nutrition The simple od channels run in the stroma and the centres of the l groups are poorly nourished) Cystic spaces lined by le-layered columnar or cubicle epithelium were common cus-secreting cells were seen in parts of the tumour e stroma varied from a markedly lymphoid type to broblastic tissue, embryonic in appearance richly lar and active The appearances suggested sar matous change Areas of hæmorrhage polymorpho lear cell infiltration degeneration and necrosis were ly scattered throughout the growth The advanced rentiation so characteristic of the dermoid was not n. There was no evidence of tissue of epiblastic deriva Cartilage commonly seen in these tumours (though ted macroscopically) was not found

[illegible]—The boy was readmitted 18 months later with a large retroperitoneal tumour mass Laparotomy was performed but no further procedure was undertaken as the condition was obviously inoperable He died soon afterwards A comparison of the histology of this tumour with that of the growth of the testis would have been of interest, but unfortunately an autopsy could not be performed.

This case draws attention once again to non descent and injury as factors in the causation of malignant disease of the testis. The tumour is undoubtedly an example of a teratoma undergoing carcinomatous change The suggestion of sarcoma in the appearance of parts of the stroma is interesting in view of the statement of Dew[1] that no case of pure sarcoma arising in a teratoma can be found in the literature The same author in commenting upon the statement that "sarcoma is the commonest tumour of the testicle and that it is an exception to the rule that sarcomata do not metastasise to lymph glands" remarks that the common tumour of the testicle is epithelial and is a carcinoma Its behaviour in regard to secondary depositions in lymph glands is therefore not exceptional This case certainly supports that view

The history of undescended testicle in this case—admittedly somewhat indefinite—does lead to speculation (in view of the very definite repeated traumata in 1931) regarding the treatment of undescended testicle Opinions are very divided upon this question Numerous cases of new growth following injury to undescended testicles have been recorded, and in view of this, the removal of undescended testes is worth consideration Edington and Cappell[2] record an interesting case of adenocarcinoma in an undescended testicle in a horse

I wish to express my thanks to Mr Harold Dodd, under whose care this patient was admitted, for permission to record this case

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ABDOMINAL RELAXATION IN ANÆSTHESIA

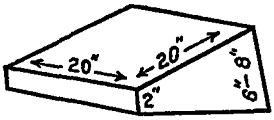
By DUNCAN C L FITZWILLIAMS, C M G , M D Edin , F R C S Eng
SENIOR SURGEON TO ST MARY'S HOSPITAL, LONDON

ANÆSTHESIA has made great strides forward of late and new anæsthetic drugs are continually being introduced To the surgeon however it matters little what drug is given provided the result is good

Apart from midwifery practically speaking there is only one reason for giving an anæsthetic and that is the performance of an operation in a painless and safe manner An anæsthetic fails if both these objects are not achieved The first is attained easily but the second with more difficulty The operations where the greatest difficulty arises are all, or nearly all abdominal operations where absolute relaxation is essential and this is sometimes hard to obtain Want of relaxation may jeopardise the success of the operation by increasing the difficulty of performance—besides having a disastrous effect on the tempers of all concerned It is unnecessary to go further into details

It is of the utmost importance therefore that relaxation should be attained but this may be quite impossible to bring about by anæsthetic methods alone In the search for new drugs the simple physiology of relaxation seems to have been lost sight of;

but relaxation can just as easily be got by posture as it can by anæsthesia, and the obvious thing is to combine the two to obtain the maximum effect



If a person sits in a low chair and his abdomen is palpated it is found to be as lax as it is possible to be, and it requires a great effort on his part to render it tense for any length of time. If the patient is laid flat on his back on a table or couch the pelvis is rotated downwards by the weight of his lower limbs and the abdominal muscles put on the stretch and are naturally tense We recognise this when we palpate an abdomen and raise the patient's knees to relax the muscles This sitting, or semi-sitting, position is what is needed on the operating table It can be brought about by placing a firm triangular cushion under the thighs of the patient so as to raise the knees 6 to 8 in off the table; relaxation can be increased, but only slightly, by raising the shoulders

I have used a cushion now for all abdominal cases at St Mary's Hospital for nearly ten years and have introduced them to the theatres of the other hospitals with which I am associated Many of my colleagues now use them also in a routine manner. The dimensions of the cushion are as follows (see Figure) · thickness, 6–8 in ; breadth, 20 in ; length, 20 in. The cushion is hard, stuffed firmly with horse hair, and covered with waterproof for cleanliness. An ordinary pillow is almost useless, for it is too soft and the knees sink into it in a few moments till they are very little above their ordinary level

My advice to anæsthetists is to introduce a pillow of this sort to the theatres and nursing-homes where they work The surgeon may not at first realise the methods adopted to produce absolute relaxation but one and all will appreciate it

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF RADIOLOGY

AT a meeting of this section on Nov. 16th the chair was taken by Dr. F. HERNAMAN-JOHNSON, the president. Dr. R. B KIRKLIN, of the Mayo Clinic, spoke on

Radiology of the Gastro-intestinal Tract

It would be advisable, he said, for every patient with more or less chronic symptoms which might have their origin in the gastro-intestinal tract to be subjected to radiological examination. This was at present impracticable, partly because of expense and partly because a competent radiological service was not always available. The physician therefore only sought the aid of the radiological department when he thought that such an examination would elicit significant data, or when the history and symptoms were strongly suggestive of some lesion of the alimentary canal. The medical profession had appealed widely to the public to come early for diagnosis in order that cancers might be detected at an early stage ; the profession was therefore under a special obligation to find existing cancers at the earliest possible opportunity. By radiological means alone could many malignant growths be diagnosed

Certain clinical manifestations might be regarded as important signals for a full X ray examination of the gastro-intestinal tract These were hæmorrhage from the alimentary canal, in the form of gross hæmatemesis or melæna, or of slow oozing or tarry stools, anæmia; marked and rapid loss of weight; repeated attacks of nausea and vomiting; recurring or persistent abdominal pain or distress related to food; constipation accompanied by abdominal pain or alternating with diarrhœa; chronic diarrhœa, and vague atypical abdominal symptoms for which no cause was apparent. Peptic ulcer was so often the cause of gross hæmorrhage from the stomach that it was sometimes diagnosed in the presence of quite a different lesion, for example, œsophageal varix. This condition often showed a characteristic mottled appearance in the skiagram which was sufficient for conclusive diagnosis A large number of cases, however, did not offer this radiological evidence The very careful study of the mucosal appearance of the œsophagus which was necessary for the diagnosis was justified by the importance of success when it was attained. It was equally important to make an extremely careful study of the mucous membrane of the stomach. Dr. Kirklin illustrated this point by reference to a case of a woman of 49 who, during an attack of sick headache a month before, had spat out about a tablespoonful of bright red blood She had feared cancer and had had a radiological examination which had proved entirely negative. At the Mayo Clinic she had been allowed to drink the barium too quickly, and once again the reports had been negative A careful study of the mucosal pattern with the first mouthful or two of barium had, however, revealed some interruption of the rugæ with an elliptical shadow, indicating a sessile polyp on the posterior wall of the stomach She had in fact had an adenomatous polyp 2 cm in diameter with shallow ulceration on the surface Unless the radiological examination was carried out in such a way as to allow of frontal observation of the mucosal relief, small lesions would escape observation. Because most lesions deformed the profile of the barium, this necessity for careful study of the mucous membrane had not received the full recognition it deserved.

For the detection of small lesions in the colon the double contrast method was essential The colon was filled with a barium enema in the usual way, but if this examination proved negative and there was a history of bleeding, the colon should subsequently be filled with air. The patient was sent away to evacuate the enema, which he was usually unable to do completely at first. When he returned the colon was distended with air under fluoroscopic control, and if remains of the enema were found in the colon the patient was sent away to defæcate again, the introduction of the air having given him the necessary stimulus This was repeated until the colon appeared absolutely clear, and the introduction of air then served to show up lesions like small polypi which often proved to be low-grade cancers At the Mayo Clinic this double contrast method was an absolute routine if no other cause for bleeding from the rectum could be found

One of the most perplexing signs with which the physician had to deal was anæmia, and a laborious investigation was often necessary before a diagnosis could be made Benign polypoid new growths in the stomach or bowel might become superficially eroded so that there was a slight constant seeping away of blood In every obscure case there should be a radiological examination of the gastro-intestinal rt In one case a man of 65 had come to the clinic r general examination as he felt he was "getting on" e had no particular symptoms but the routine restigation revealed a low grade anæmia He had d hæmorrhoids for eighteen months or two years th slight bleeding which he had ascribed to the piles rium enema had not revealed any lesion, but the uble contrast method had shown up a small round dunculated polyp which had been successfully moved It was very important to have stereoscopic ms to distinguish these small growths from fæcal ntents To consider cancer in cases of loss of eight might seem illogical in the absence of any mptoms pointing to the gastro intestinal tract evertheless, cancer of the alimentary canal was tremely insidious in onset and was often heralded r loss of weight A competent radiological examination was often the only means of making an early agnosis In one case a man of 45 had complained l nothing whatever but the loss of 25 lb in three onths and of an inability for three weeks to digest e of his favourite dishes The radiographs showed tensive ulcerated carcinoma of the distal half of he lesser curvature of the stomach

Recurrent vomiting for no obvious reason was an mphatic indication for radiological examination, but ausea was not an impressive symptom and might be gnored Yet it might be the sole indication of serious astric disease A physician suffering from angina ectoris and coronary sclerosis complained of rather rsistent nausea, particularly noticeable with an mpty stomach Gastro intestinal examination in the adiological department had shown a very small lesion n the lesser curvature with a typical meniscus sign e had in fact an extensive perforating cancer of the tomach, fixed to the pancreas The clinical mani stations of peptic ulcer were definite, but it was not easy o distinguish between gastric and duodenal ulceration r between malignant and benign growths In these ifferential diagnoses radiology might often be of he greatest help If the radiologist could definitely nise a crater the duodenum should be opened up ven though the surgeon was unable to find a growth n superficial examination A persistent fleck of arium remaining in the duodenum despite manipu ion often revealed an ulcer which failed to cause eformity Duodenitis might also be diagnosed by a tudy of the duodenal mucous membrane in certain ases This condition was not regarded at the ayo Clinic as necessarily a forerunner of duodenal lceration The symptoms might extend for about e same period of time and have the same degree severity as those of duodenal ulcer Duodenitis s therefore diagnosed when the radiologist found sistent and varying deformity of the duodenum ctured with irritability and spasm so that the rium rushed through and an adequate picture was difficult to obtain The mucosa when visualised, eared as a fine reticular network

It was possible in the preliminary fluoroscopic mination to recognise the presence of air between diaphragm and the liver This in the absence of surgical intervention, indicated a perforating and further radiological examination was ra indicated.

TIAL DIAGNOSIS OF BENIGN AND MALIGNANT CONDITIONS

ulcer should be regarded as malignant [illegible] following differential [illegible] benign growth was [illegible] any ulcer more [illegible] ant [illegible]

ulcer showed a regular hemispherical outline with a sharply defined dense barium shadow, the malignant one was conical and irregular with a faint, poorly defined outline The benign growth usually appeared on the lesser curvature distant from the pylorus, while the malignant would be found on the greater curvature or the posterior wall, 75 per cent of ulcers near the pylorus were malignant Peristalsis was diminished or absent and spastic manifestations were rare in malignant growths, but the benign ulcer was usually accompanied by active peristalsis and often by narrowing or curling of the antrum and hour glass contraction The pylorus also was spastic, whereas in malignancy it would be found gaping The rugæ usually converged towards the niche of a benign ulcer, while in a malignant case they were faintly marked or effaced The best test, however, was the therapeutic test It was very exceptional for a malignant ulcer to disappear under a fortnight's medical treatment

The possibility of diaphragmatic hernia should always be borne in mind by the radiologist The diagnosis of prepyloric hypertrophy from gastric syphilis and prepyloric ulcer or cancer was difficult, but there were three distinguishing symptoms and if two of these were present a diagnosis of hypertrophy might be made These were a slight invagination or mushrooming of the bulbar base, a marked cleft in the inferior border of the canal and an elongation of the canal Chronic or recurring diarrhœa called urgently for full colon investigation Patients who presented peri abdominal symptoms often enough owed them to purely functional conditions, but in a small minority there were diseases of the gastro intestinal tract which could hardly be diagnosed without radiology The stomach had been described as the fire alarm box of the abdomen and many negative reports must be expected Nevertheless radiology was capable of giving worthy assessments in diagnosis and in the elimination of malignant disease

DISCUSSION

Dr A F **BARCLAY** said that the double contrast method had originated in this country but had been neglected He asked what was the proof of malignancy, the only real proof was the death of the patient, and that was averted by surgical intervention

Dr J A L **LYNHAM** thought that duodenitis was less a pathological entity than a reflex associated with some lesion elsewhere

Dr G T **VILVANDRÉ** thought that duodenitis was a bad diagnosis, the condition really being duodenal ulcer The failure to diagnose malignancy early was not the fault of the radiologist or even of the physician but of the patient, who went to the chemist when suffering from abdominal discomfort In his experience 99 per cent of ulcers on the greater curvature of the stomach were malignant

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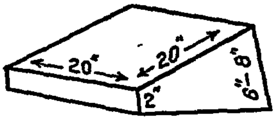
MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY

At a meeting of this society held in London on Nov 8th with Dr J C **YOUNG**, the president, in the chair, a paper on

Post-menopausal Neuroses

was read by Dr **HILDA WEBER** In considering the factors favouring the onset of post menopausal neuroses she pointed out that at the period of life the interest of sexual maturity has passed, at least [illegible] the menopause as a matter of [illegible], whilst the time when a woman's years have [illegible] but relaxation can just as easily be got by posture as it can by anæsthesia, and the *obvious thing* is to combine the two to obtain the maximum effect.



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DISCUSSION

Dr A F **BARCLAY** said that the double contrast method had originated in this country but had been neglected He asked what was the proof of malignancy , the only real proof was the death of the patient, and that was averted by surgical intervention

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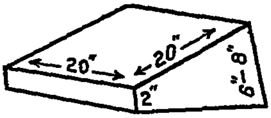
MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY

AT a meeting of this society held in London on Nov 5th with Dr J C YOUNG, the president in the chair, a paper on

Post-menopausal Neuroses

was read by Dr HILDA WEBER. In considering the factors favouring the onset of post menopausal neuroses, she pointed out that at this period of life the interest of sexual maturity has passed, as has even the menopause as a matter of everyday interest, whilst the time when a woman's years have become but relaxation can just as easily be got by posture as it can by anæsthesia, and the obvious thing is to combine the two to obtain the maximum effect.



If a person sits in a low chair and his abdomen is palpated it is found to be as lax as it is possible to be, and it requires a great effort on his part to render it tense for any length of time If the patient is laid flat on his back on a table or couch the pelvis is rotated downwards by the weight of his lower limbs and the abdominal muscles put on the stretch and are naturally tense We recognise this when we palpate an abdomen and raise the patient's knees to relax the muscles This sitting, or semi-sitting, position is what is needed on the operating table It can be brought about by placing a firm triangular cushion under the thighs of the patient so as to raise the knees 6 to 8 in off the table; relaxation can be increased, but only slightly, by raising the shoulders

I have used a cushion now for all abdominal cases at St Mary's Hospital for nearly ten years and have introduced them to the theatres of the other hospitals with which I am associated. Many of my colleagues now use them also in a routine manner. The dimensions of the cushion are as follows (see Figure) · thickness, 6–8 in , breadth, 20 in , length, 20 in The cushion is hard, stuffed firmly with horsehair, and covered with waterproof for cleanliness An ordinary pillow is almost useless, for it is too soft and the knees sink into it in a few moments till they are very little above their ordinary level

My advice to anæsthetists is to introduce a pillow of this sort to the theatres and nursing-homes where they work The surgeon may not at first realise the methods adopted to produce absolute relaxation but one and all will appreciate it.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF RADIOLOGY

AT a meeting of this section on Nov 16th the chair was taken by Dr. F. HERNAMAN-JOHNSON, the president Dr. R. B. KIRKLIN, of the Mayo Clinic, spoke on

Radiology of the Gastro-intestinal Tract

It would be advisable, he said, for every patient with more or less chronic symptoms which might have their origin in the gastro-intestinal tract to be subjected to radiological examination This was at present impracticable, partly because of expense and partly because a competent radiological service was not always available The physician therefore only sought the aid of the radiological department when he thought that such an examination would elicit significant data, or when the history and symptoms were strongly suggestive of some lesion of the alimentary canal The medical profession had appealed widely to the public to come early for diagnosis in order that cancers might be detected at an early stage ; the profession was therefore under a special obligation to find existing cancers at the earliest possible opportunity By radiological means alone could many malignant growths be diagnosed.

Certain clinical manifestations might be regarded as important signals for a full X ray examination of the gastro-intestinal tract. These were. hæmorrhage from the alimentary canal, in the form of gross hæmatemesis or melæna, or of slow oozing or tarry stools; anæmia; marked and rapid loss of weight; repeated attacks of nausea and vomiting; recurring or persistent abdominal pain or distress related to food; constipation accompanied by abdominal pain or alternating with diarrhœa; chronic diarrhœa, and vague atypical abdominal symptoms for which no cause was apparent. Peptic ulcer was so often the cause of gross hæmorrhage from the stomach that it was sometimes diagnosed in the presence of quite a different lesion, for example, œsophageal varix. This condition often showed a characteristic mottled appearance in the skiagram which was sufficient for conclusive diagnosis A large number of cases, however, did not offer this radiological evidence The very careful study of the mucosal appearance of the œsophagus which was necessary for the diagnosis was justified by the importance of success when it was attained. It was equally important to make an extremely careful study of the mucous membrane of the stomach. Dr. Kirklin illustrated this point by reference to a case of a woman of 49 who, during an attack of sick headache a month before, had spat out about a tablespoonful of bright red blood. She had feared cancer and had had a radiological examination which had proved entirely negative. At the Mayo Clinic she had been allowed to drink the barium too quickly, and once again the reports had been negative A careful study of the mucosal pattern with the first mouthful or two of barium had, however, revealed some interruption of the rugæ with an elliptical shadow, indicating a sessile polyp on the posterior wall of the stomach She had in fact had an adenomatous polyp 2 cm in diameter with shallow ulceration on the surface Unless the radiological examination was carried out in such a way as to allow of frontal observation of the mucosal relief, small lesions would escape observation. Because most lesions deformed the profile of the barium, this necessity for careful study of the mucous membrane had not received the full recognition it deserved.

For the detection of small lesions in the colon the double contrast method was essential The colon was filled with a barium enema in the usual way, but if this examination proved negative and there was a history of bleeding, the colon should subsequently be filled with air. The patient was sent away to evacuate the enema, which he was usually unable to do completely at first. When he returned the colon was distended with air under fluoroscopic control, and if remains of the enema were found in the colon the patient was sent away to defæcate again, the introduction of the air having given him the necessary stimulus This was repeated until the colon appeared absolutely clear, and the introduction of air then served to show up lesions like small polypi which often proved to be low-grade cancers At the Mayo Clinic this double contrast method was an absolute routine if no other cause for bleeding from the rectum could be found.

One of the most perplexing signs with which the physician had to deal was anæmia, and a laborious investigation was often necessary before a diagnosis could be made Benign polypoid new growths in the stomach or bowel might become superficially eroded so that there was a slight constant seeping away of blood. In every obscure case there should be a radiological examination of the gastro-intestinal tract. In one case a man of 65 had come to the clinic for general examination as he felt he was "getting on" He had no particular symptoms but the routine investigation revealed a low-grade anæmia He had had hæmorrhoids for eighteen months or two years with slight bleeding which he had ascribed to the piles Barium enema had not revealed any lesion but the double contrast method had shown up a small round pedunculated polyp which had been successfully removed It was very important to have stereoscopic films to distinguish those small growths from fæcal contents To consider cancer in cases of loss of weight might seem illogical in the absence of any symptoms pointing to the gastro intestinal tract Nevertheless, cancer of the alimentary canal was extremely insidious in onset and was often heralded by loss of weight A competent radiological examination was often the only means of making an early diagnosis In one case a man of 45 had complained of nothing whatever but the loss of 25 lb in three months and of an inability for three weeks to digest one of his favourite dishes. The radiographs showed extensive ulcerated carcinoma of the distal half of the lesser curvature of the stomach

Recurrent vomiting for no obvious reason was an emphatic indication for radiological examination, but nausea was not an impressive symptom and might be ignored Yet it might be the sole indication of serious gastric disease A physician suffering from angina pectoris and coronary sclerosis complained of rather persistent nausea, particularly noticeable with an empty stomach Gastro intestinal examination in the radiological department had shown a very small lesion on the lesser curvature with a typical meniscus sign, he had in fact an extensive perforating cancer of the stomach, fixed to the pancreas The clinical manifestations of peptic ulcer were definite, but it was not easy to distinguish between gastric and duodenal ulceration or between malignant and benign growths In these differential diagnoses radiology might often be of the greatest help If the radiologist could definitely visualise a crater the duodenum should be opened up even though the surgeon was unable to find a growth on superficial examination A persistent fleck of barium remaining in the duodenum despite manipulation often revealed an ulcer which failed to cause deformity Duodenitis might also be diagnosed by a study of the duodenal mucous membrane in certain cases. This condition was not regarded at the Mayo Clinic as necessarily a forerunner of duodenal ulceration The symptoms might extend for about the same period of time and have the same degree of severity as those of duodenal ulcer Duodenitis was therefore diagnosed when the radiologist found transient and varying deformity of the duodenum combined with irritability and spasm so that the barium rushed through and an adequate picture was very difficult to obtain The mucosa, when visualised, appeared as a fine reticular network

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Every gastric ulcer should be regarded as malignant until the contrary was proved The following differential points were however, useful The benign growth was small— less than 2 cm in diameter, any ulcer more than 3 cm across was probably malignant The benign ulcer showed a regular hemispherical outline with a sharply defined dense barium shadow, the malignant one was conical and irregular with a faint, poorly defined outline The benign growth usually appeared on the lesser curvature distant from the pylorus, while the malignant would be found on the greater curvature or the posterior wall, 75 per cent of ulcers near the pylorus were malignant Peristalsis was diminished or absent and spastic manifestations were rare in malignant growths, but the benign ulcer was usually accompanied by active peristalsis and often by narrowing or curling of the antrum and hour glass contraction The pylorus also was spastic, whereas in malignancy it would be found gaping The rugæ usually converged towards the niche of a benign ulcer, while in a malignant case they were faintly marked or effaced The best test, however, was the therapeutic test It was very exceptional for a malignant ulcer to disappear under a fortnight's medical treatment

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MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY

AT a meeting of this society held in London on Nov 8th with Dr J C **YOUNG**, the president, in the chair, a paper on

Post-menopausal Neuroses

was read by Dr **HILDA WEBER** In considering the factors favouring the *onset* of post menopausal neuroses she pointed out that at this period of life the interest of sexual maturity has passed, and even the menopause as a matter of condolence is over, whilst the time when a woman's years have become a source of pride has not yet arrived. These and other circumstances cause personal limitations to come into bolder relief, throwing possibilities into shadow. It is not therefore surprising that any defect in the individual's life-style is liable to make itself felt Indeed, contrary to popular opinion, there is no real difference in the incidence of mental disorder at this time of life and at the menopause Nevertheless, though menopausal disturbances have received much attention, comparatively little has been written about the post-menopausal period. In treatment the age of onset makes it necessary to get practical results in a relatively short time. It also suggests that the faults of life-style may be deeply embedded; a certain fixity of behaviour is in fact inseparable from this time of life, and this makes it hard for the patient to remould her way of living. Prolonged and deep analysis is generally held to be inadvisable—if, indeed, it is possible. Yet a fair working knowledge of the patient's history and personality is essential if sound results are to be obtained For though new paths may not now be made, the way in which the patient has for so long withstood the stresses of life indicates that the old paths had something of constructive value. It is the work of the doctor to discover these constructive elements, and to proceed from these to the possibilities of future development In this work the method of approach is important. The faults existing in the patient's life plan have become so closely woven into her personality that clumsy attempts at psychotherapy may do more harm than good. On the other hand, with correct technique, where cooperation is obtainable, a very real success is possible The obstacles, said Dr. Weber, will stimulate and not deter the true investigator.

LIVERPOOL MEDICAL INSTITUTION

At a meeting of this institution on Nov 8th, with Dr. J Murray Bligh, the president, in the chair, Mr J. B Oldham read a short paper on

Coccygeal Sinus

He reported a series of 23 cases of coccygeal sinus seen since 1933, 14 of which were in females Twenty were infected when first seen; of these 19 were excised, the wound being sutured, and primary union was obtained in all Mr Oldham considered that if primary union was to be obtained there must be asepsis or adequate antisepsis, avoidance of post-operative infection from the anus, complete hæmostasis, avoidance of buried absorbable sutures as ligatures, obliteration of the cavity left after excising the sinus, and the use of an everting stitch that will overcome the tendency of the skin edges in this region to turn in The patient is prepared as for hæmorrhoids, and after operation fluids only are given and in this way the bowels are kept unopened for six to eight days A wide elliptical incision is made down to the sacro-coccygeal ligaments Hæmostasis is secured by forci-pressure and hot packs. The cavity is obliterated by deep sutures—usually six—of silkworm which pass through all the thickness of the tissues in the edge of the cavity left after excision and also take a bite of the ligaments in the dorsum of the sacrum Mr Oldham noted that in 18 of his cases there were secondary sinuses, and of these 14 opened on the left of the midline In only one case had a correct diagnosis been made before the case was referred for consultation. This failure to make a correct diagnosis Mr Oldham considered natural, as in only one of the standard English text-books of surgery was coccygeal sinus even mentioned

Hour-glass Tumours of the Spine

Prof Henry Cohen read a paper in which he said that in a series of 50 cases of compression paraplegia due to tumours of the spinal canal he had observed three cases of so-called hour-glass tumours, which merited separate clinical description because despite their varied pathology they displayed characteristic features which gave rise to special problems, both in diagnosis and treatment. He confined his detailed records to those cases having extra- and intra-dural masses joined by a narrow pedicle passing through an enlarged intervertebral foramen. He emphasised that any level of the spine was a possible site for such a tumour which might arise from nervous, fascial, osseous, and other local tissues These tumours displayed the usual symptomatology of spinal compression with corresponding changes in pressure and chemistry of cerebro spinal fluid, but additional features which merited emphasis were (1) the frequent and severe root pains which resulted from the situation of the tumours, (2) the presence in the cervical and occasionally in the lumbar region of a palpable mass, and (3) pain on movement of the spine, rigidity, &c, arising from the vertebral damage The X ray picture was in most cases typical though commonly interpreted as tuberculous disease of the spine with secondary abscess formation In order to prevent recurrence of the tumour, both intra- and extra-spinal portions must be removed, the primary attack being on the intra-spinal portion

In the discussion which followed, Dr G S Swan said that in a case under his care the first symptom was severe pain along the course of a nerve, which Prof. Cohen had stressed as an important point in the differential diagnosis For about six months before the onset of pressure symptoms the patient had severe "neuritis" of the left arm Pressure symptoms arrived suddenly and affected the left arm and leg He was then seen by Prof Cohen and later operated upon by Prof R E Kelly Convalescence was uneventful, and except for slight paresis of the left arm, relief of symptoms was complete The patient had been at work at his old job as a labourer carrying heavy loads for over two years He states he is quite well and able to do the heaviest work There is no trace of any paresis and recovery seems complete

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY

At a meeting of this society held in Liverpool on Oct 26th, with Prof Daniel Dougal (Manchester), the president, in the chair, a note on the use of

Willett's Forceps in Placenta Prævia

was read by Mr C H Marshall (Liverpool) This method of treatment, he said, was introduced in 1925 by the late J Abernethy Willett, who believed that the simplest means of controlling bleeding in placenta prævia was to puncture the membranes and make downward traction on the presenting vertex by means of Martel's scalp forceps (These forceps had since been modified and called after him) The method involved minimal handling, and consequently less risk to the mother and a better chance for the baby In the period 1926–31 before it was introduced at the Liverpool Maternity Hospital 170 cases of placenta prævia were treated either conservatively or by podalic version or Cæsarean section, there were 14 maternal deaths (8 2 per cent) and in the cases treated by version less than 12 per cent of the babies survived Willett's procedure was adopted in 1932, and had been increasingly used since then, with a corresponding decrease in the number of versions During this second period 118 cases had been treated, with 4 maternal deaths, and in the cases treated with Willett's forceps half the babies had survived The percentage of cases treated by Cæsarean section remained constant at about 20

Method of application —The lithotomy position is desirable but not essential Anæsthesia is not used in a very anæmic patient, indeed, it is often omitted in multiparæ It is important to remove any clots present from the vaginal vault, this can be done simply by inserting a Sims's speculum along the posterior vaginal wall, and then depressing the vulval end An assistant fixes the head, two fingers are passed into the vagina, and one or both according to its dilatation, through the cervix A point is sought where only membranes intervene between the head and the examining finger this is most likely to be in front, as the placenta is usually found on the posterior wall of the lower segment The membrane hook is guided along the fingers, and the membranes scratched through against the head Without withdrawing the fingers, the forceps is similarly guided in, opened, pressed firmly against the scalp, and closed The grip on the scalp is tested by traction, which should control any hæmorrhage at once, before the fingers are withdrawn A cord carrying a pound weight over a pulley at the foot of the bed is attached to the handles of the forceps If anæsthesia has been used, the tension should be controlled with the hand until vomiting has stopped The forceps is removed when the head has descended completely into the pelvis

Comparison with other methods —In Willett's method anæsthesia may often be omitted, the manipulations are gentler, less blood is lost, and less liquor escapes than during a bipolar version The disadvantages of a breech presentation, especially in a first pregnancy, are avoided Version tends to be used in cases of complete placenta prævia, and this partly accounts for the high fœtal mortality If a de Ribes's bag can be inserted easily, the forceps can be applied still more easily, and with better results Vaginal packing is a bad method, owing to the high incidence of sepsis It was usually used if the os was closed or nearly so, if there is, as there almost always is room for one finger and the forceps to pass through the os, the forceps may be applied

Mode of action of the forceps —When the forceps is applied against the most accessible part of the head and the jaws are closed, a ridge of scalp is raised If traction is now applied a wider area of scalp is drawn out in the form of a cone, the apex of which is drawn into the internal os, thus pressure is made on the bleeding surface, and hæmorrhage at once checked

Indications for its use —The vertex must be presenting If the breech is downwards, external cephalic version can be done and the forceps applied but this is not recommended, it is simpler to bring down a leg With a transverse lie it is probable that the placenta prævia is complete With a complete placenta prævia, owing to the profuse hæmorrhage which may accompany any vaginal procedure, the mother's interests are often best served by Cæsarean section In an emergency it is probably easier to burrow with the fingers through the placenta and grasp a foot than to apply the forceps to the scalp of a head which is difficult to fix and perhaps even to bring to the middle line In disproportion, which is seldom met with in these cases owing to the frequency of prematurity, Willett's forceps is contraindicated.

Disappointments —Rarely the forceps loses its grip and comes off before fulfilling its purpose, and this necessitates reapplication or some other form of treatment It occurs most commonly if the scalp becomes macerated On applying the forceps it is important to ensure that the amount of scalp grasped has completely and evenly filled the jaws of the instrument Other disappointments are usually due to factors common to all methods of vaginal delivery in this condition, not infrequently the fœtus dies in utero

In conclusion Mr Marshall said that traction on the scalp perfectly fulfils the greatest of its aims—the control of hæmorrhage If Willett's method were more widely used fewer mothers would die and more babies would survive While not comparing it with Cæsarean section, which had its special sphere of usefulness in the treatment of placenta prævia, he maintained that it was simple and could be more easily carried out than bipolar version

Mr J ST GEORGE WILSON (Liverpool) read a note on the

Aschheim-Zondek Reaction in Genital Tuberculosis

He had had two cases of proved tuberculous salpingo-oöphoritis with positive Aschheim Zondek test before operation, two cases of prolonged amenorrhœa with histories suggesting tuberculosis with positive A Z test, one case definitely phthisical with a short period of amenorrhœa and a negative A Z test, but showing evidence of increase of anterior pituitary secretion, two cases giving negative A-Z test, but showing evidence of excess of anterior pituitary, with a definite history of tuberculosis, in one case positive before operation, and two cases giving completely negative A Z test after being treated, in one case by operation at which tuberculosis was proved, and in the other, clinically tuberculous, by deep X rays He concluded that the Aschheim Zondek test was commonly positive in association with tuberculous salpingo oöphoritis, that the presence of a positive test associated with amenorrhœa when pregnancy could be excluded was suggestive of tuberculosis, and that the presence of a modified test might indicate healing or retrogression of genital tuberculosis, especially if it had been previously positive He commented on the fact that nothing had been written on the subject

Cases and Specimens

HYPERSEXUALITY TREATED BY PARTIAL OVARIOTOMY

Mr P MALPAS (Liverpool) described the case of a woman of 23, suffering from uncontrollable sexual irritability. She was a normally built girl, who had had a child at 16 and lived on the streets thereafter until she was 22, when, on account of soliciting, she was placed on probation in an institution On examination both ovaries felt enlarged but mobile Laparotomy was done in the hope that the ovarian change might be at the root of the trouble Both ovaries contained innumerable follicular cysts Wedge resection was done on each side, and a quarter of each organ left Both pampiniform plexuses were varicose, and the more prominent veins were ligatured. Mr Malpas interpreted the case as follows long-continued excessive sexual stimulation caused over production of mature follicles the undue number of follicles ripening simultaneously caused hypersexuality The case was treated in the second phase of a vicious cycle, and resection of the hypertrophied ovaries allowed re-establishment of a normal level of sexual function

ACTINOMYCOSIS OF THE OVARY

Dr C H WALSH (Liverpool) described a case of actinomycosis of the ovary The patient was a woman of 26 with one child For six months she had had occasional attacks of severe lower abdominal pain sometimes with vomiting There was general weakness and wasting, and complaint of dysmenorrhœa with scanty menses, brownish intermenstrual discharge and constipation On examination the general condition was poor, and a mass was felt in the right fornix attached to a bulky, tender uterus A diagnosis of right tubo-ovarian abscess was confirmed at operation on Feb [illegible] 1934 There adherent to an inflamed appendix, omentum, and small intestine. The right tube and ovary and the appendix were removed; the left appendage was normal. She was discharged from hospital on March 2nd, but readmitted on July 16th, after considerable menstrual irregularity and pain in the lower left abdomen with some vomiting for the last four weeks. There was a mass palpable in the left appendage which was diagnosed as a left tubo-ovarian abscess. This was removed entire on July 20th. A loop of gut firmly attached to the uterus precluded hysterectomy. Another loop was firmly adherent at the bottom of Douglas's pouch. An ileo-ileostomy was done to prevent intestinal obstruction; two feet of ileum were left adherent in the pelvis. The wound discharged foul pus on the fifteenth day, but healed later. A blood transfusion was given four weeks after operation; her condition then improved considerably. Later she developed persistent abdominal pain and vomiting, and a mass became palpable in the right iliac fossa. The pathologist then reported that the section taken from the abscess wall contained actinomycosis. The patient was subsequently treated with iodine in milk, and her condition improved. The mass is now no longer palpable; there is an occasional discharge of pus from the lower end of the wound.

Actinomycosis of the appendages, Dr. Walsh said, is very rare. Arthur Stern in 1928 concluded that the origin was usually from the gut, and infection from the vagina is very doubtful.

The **PRESIDENT** reported the after-history of a case of sarcoma of the uterus and a case in which five years ago he successfully constructed a vagina by Baldwin's operation; Dr. J. W. **BRIDE** (Manchester) described a case of adenocarcinoma of the corpus uteri associated with squamous carcinoma of the vagina; and Dr. **WALSH** showed a specimen of tubal chorion-epithelioma.

HUNTERIAN SOCIETY

AT a meeting of this society held in the Cutlers' Hall on Nov. 19th, with Dr. W. H. F. **OXLEY**, the president, in the chair, the subject of discussion was

The Lay Cult of Health

SIR ERNEST GRAHAM-LITTLE, M.P., in maintaining that this cult has become injurious, spoke of the irresponsible advice provided by newspapers not only in flamboyant advertisements of patent medicines, but also in contributions, usually unsigned, called "health notes." These contributions could be divided into two classes: (1) the obvious—including injunctions to eat more fruit, drink more milk, or swat that fly—which had the merit of being harmless, and (2) those in which the editor pretended to convey the latest information, not yet known to the medical profession, about remedies for cancer, or tuberculosis, or manipulation of the spine. Information of both types was utterly useless. Mass production was at its worst in medicine. When a man was really ill he sought the personal advice of the best expert he could find, and his most useful aid was the general practitioner. Morbid introspection was often engendered and fostered by the layman dwelling on aspects of disease of which he must be ignorant. Diet was one of the subjects most often dealt with in newspapers, and the reader was easily persuaded to a rigidity which denied him the advantages of a mixed diet. The suggestion had been made that the medical profession should attempt to purvey sound and honest information on which the public could act with confidence, but the speaker was not sanguine about the success of such efforts. All that was possible in this public way was, he thought, to emphasise the importance of fundamental principles of health.

One sad effect of lay medicine, continued Sir Ernest, was the lamentable waste of money, and he could wish that "Secret Remedies," that admirable publication of the British Medical Association, could be distributed freely among the poorer classes. Concoctions costing a few pence were sold for as many shillings, and drug-taking on the patient's own initiative easily led to dangerous addiction. Efforts had been made in Parliament to amend the laws governing the sale of patent medicines, but they had to contend with vested interests. Newspapers derived a very large part of their revenue from advertisements of these remedies; the Sunday papers and the religious journals were full of them. The possessor of a 100-guinea watch would not be so foolish to entrust its repair to a plumber or a smith; yet he would cheerfully commit his body—which was far more complex and valuable—to people who were ignorant of its working. The only sure way to combat these things was by a better education of the mass of the people, particularly in biology, and he had tried (without success) to induce the senate of the University of London to include biology among the compulsory subjects in the matriculation examination. The existence of a large and growing body who understood human function would do much to counteract the activities of the untrained health adviser, the journalist who turned to medicine as a by-product.

Dr. **HENNING BELFRAGE** said that no one, doctor or layman, could be content with the present health and physique of the people; hence the cultivation of increased health was clearly to be desired. Every individual, moreover, must be educated in the elementary principles. The medical profession itself had been preoccupied with the ideas of morbidity, almost forgetting that there was a state of health which was something more than a mere negation of disease, and that much remained to be taught concerning it. He feared that credit for the increase of public interest in health must be given largely to lay initiative—e.g., the activities associated with boy scouts, girl guides, and infant welfare centres—and the Ministry of Health and other bodies had signally failed to follow the trend of opinion. He would welcome a move in medical societies to discuss health as well as disease. He did not agree that scientific knowledge could not be translated into language which ordinary people could understand; by means of the popular press, the cinema, and the wireless this idea was being proved untrue. A distinguished medical man had said that the road to health was a broad and easy one, so that only fools needed to err; why, then, was this road lined with repair shops for the machines which had broken down through faulty usage or neglect? The whole matter called for organised effort.

Mr. **ELLIS BARKER** introduced himself as an example of what the opener regarded as a despicable quack. After describing the improvement he had wrought in his own health, he contended that the mass of the people were misled not only by commercial interest but by members of the medical profession too. Medicine went by fashions; at one time it was micro-organisms, at another bleeding of all and sundry. The profession did not possess a monopoly of medical knowledge, and a man might pass medical examinations without being able to do a thing. He believed that the profession had largely lost its weight with the public, and also that medical science had never been at such a low ebb as it was to-day.

Mr **Douglas Woodruff** said that patent medicines were expensive because of cost of advertising them The continual publicity built up confidence, so that in illness people turned to what had become a fixed idea of cure Quacks were nothing new, a suffering person was glad of anybody or anything which was likely to offer help To stand aside and say that knowledge could be imparted only in a private interview was somewhat idle Personal history was individual, but there was a common humanity, and there was a large body of collective wisdom which could be imparted otherwise than by a pat on the back The general practitioner was the doctor the public liked best, and that was because he was least a doctor and most a man It was impossible to stop public curiosity in such matters as health, neither could newspapers be prevented from catering for that curiosity

Dr H H **Sanguinetti** thought that before medical men wrote for the public they would do well to come together and convince the great body of the profession that the views they were propounding were correct The public thought that medical men were so much concerned with the cure of disease that they were not the people to consult about health He doubted whether the present dogmatic teaching by the medical profession was the best way to go about the work

Sir **John Weir**, speaking as a homœopathic physician said that people wanted to live the best life they could, and if the profession had beneficial knowledge to give, it should be given freely Everything should be done to get rid of the present hypocritical attitude

Sir **Bruce Bruce-Porter** thought that every article published on health should be signed by its author The future of the profession lay along the lines of prevention rather than cure, and in time to come people would look to their doctor as their medical officer of health

PATHOLOGICAL SOCIETY OF MANCHESTER

At a meeting of this society on Nov 14th Prof O C W **Prausnitz** spoke on

Idiosyncrasy

Case histories of urticaria, asthma, and digestive supersensitiveness demonstrated, he said, the general uniformity of the chief symptoms, no matter what the exciting cause, and fairly independently of the particular tissue affected This was well illustrated by researches on hay fever The fundamental work was carried out by Blackley of Manchester who, himself a hay fever patient, in 1873 described the characteristic features of the malady and cleared up its ætiology, he also showed the way to prevent the onset of the attacks Dunbar and Prausnitz studied the ætiological agent of the disease and prepared an antiserum which was shown to act not as an antitoxin but as a kind of cytolysin Comparison of this and kindred diseases with anaphylaxis had led the speaker to demonstrate in the serum of supersensitive patients a substance which transmitted the sensitive condition to normal persons The chief feature of the test, the Prausnitz Küstner test, was to inject intradermally 0 1 c cm of the patient's serum to a normal subject and to inject into the same spot on the following day 0 1 c cm of a suitable dilution of the causative agent A local urticarial reaction developed, there was no danger of general sensitisation to the person subject to the test

This method was applicable to many forms of supersensitiveness The ætiology of supersensitiveness was twofold (1) The attacks were brought on, probably in every case, by a specific agent The specific antibodies in the patient sensitive to this agent would liberate from it some decomposition product, perhaps Oriel's P-substance, which caused the lesions (2) The liability of certain persons to produce such antibodies must depend on a constitutional factor which in many cases was inherited Treatment was directed against the agent by desensitisation with the specific substance or non specific substances—e g, peptone General measures served to lower the vagal superexcitability present in most cases, this was sometimes achieved by the administration of calcium preparations

ROYAL ACADEMY OF MEDICINE IN IRELAND

A meeting of the medical section was held on Nov 2nd with Dr V M **Synge**, the president, in the chair

Gee's Disease

Prof **Henry Moore**, in collaboration with Drs W R O'Farrell, J A Geraghty, M Moriarty, and J Murray Hayden, read a paper on Gee's (cœliac) disease in adults After a review of the subject embracing the work of Hess Thaysen in Denmark, and of Bennett, Hunter, and Vaughan in England, he described eight cases of the disease In seven of them (one not tested) there was a high proportion of total fat in the stools, the lowest fat percentage was 32 and the highest 51 4 (the average normal being 18) In all the patients the amount of split fat and the amount of nitrogen in the stools was normal but some had a high soap fat content All had a history of diarrhœa at one time or another, two had macrocytic anæmia without achlorhydria, five had hypochromic anæmia, five had hypocalcæmia, two had tetany, and all save one had decalcification of bones In three cases the skeletal changes were so advanced as to cause multiple pathological fractures Seven cases (one not tested) had a low blood sugar curve in the glucose tolerance test and the blood urea was low in five Three had achlorhydria Blood cholesterol was normal or subnormal One case had hyperthyroidism and five had some degree of infantilism One had ununited epiphyses at 26 years of age and one at 20, the former grew four inches between the ages of 23 and 26 years In three there was a decrease in height Lens opacities were present in two out of seven (tested by Dr D. O'Donoghue) The macrocytic anæmia yielded to treatment by liver extract and Marmite and the hypochromic anæmia to iron by mouth in all cases Calcium and vitamin D in large doses, with a fat low diet, relieved tetany Hydrochloric acid by mouth was used for achlorhydria The fractures united in all three fracture cases and the calcium content of the bones increased in all those showing bone decalcification save one One patient died, but in six others the results of treatment were considered satisfactory, one case being too recent to form a judgment The terms non tropical sprue and idiopathic steatorrhœa used to describe the disease are unsatisfactory said Prof.

Moore Gee was aware that the malady occurred in adults, therefore, honour being given where due, the condition should be known as Gee's disease.

Dr. Edward Harvey referred to the results obtained by McCarrison in experimental vitamin-B deficiency. Rabbits put on a diet of rice developed many of the symptoms of cœliac disease When butter was added to the diet the condition, instead of improving as was expected, grew worse, and the diarrhœa changed to steatorrhœa

Dr Geoffrey Thompson said that in such a complex syndrome as Gee's disease there was almost certainly some underlying factor common to all cases and from which all the features of the syndrome resulted The probable primary fault was defective fat absorption resulting in the fixation of calcium in the intestinal contents From this would follow the defective calcium absorption and the resulting abnormal calcium metabolism producing the clinical features of bone disease and tetany He drew attention to two peculiarities of fat absorption—namely, the fact that the molecule of fatty acid was very large compared to those of hexose or amino-acid in the case of carbohydrate or protein absorption, and secondly, the fact that fat was largely absorbed by the lymphatic vessels whereas the other foodstuffs were absorbed by the blood He suggested the estimation of changes in the blood fat following fat meals as a means of throwing light on the condition.

REVIEWS AND NOTICES OF BOOKS

Radiotherapie. Rayons X—Radium

By Paul Cottenot, Médecin électro-radiologiste à l'Hôpital Broussais, and Simone Laborde, *Chef du Service de Curiethérapie à l'Institut du Cancer* Paris. Norbert Maloine. 1934. Pp 514. Fr 70

In its second edition this volume of the series of medical monographs published under the direction of Emile Sergent, L. Ribadeau-Dumas, and L. Babonneix has been almost completely rewritten and brought up to date The introductory section of physics is on the usual lines, and the chapter on appliances which follows is clearly written and illustrated by examples of French machines A more detailed discussion of modern shock-proof apparatus would have enhanced the value of the work The chapters on radio-active substances and the methods of applying radium are written with authority; the English reader will be astonished to find descriptions of apparatus for the inhalation of radium emanation mixed with vapour and for the solution of emanation in water for internal medication, methods which, in this country, are looked upon as either useless or dangerous. The directions for applying radium and for calculating the dosage received from applicators of varying design are on the whole excellent.

The biological discussion is particularly interesting. It includes a summary of experimental work, much of which has been carried out in France, and a discussion of the various factors which influence the absorption of energy by the living cell, and, in particular, by the cancer cell, which should be read by all interested in the subject. The authors believe that the effect of irradiation is both direct on the tumour cell and indirect on the tumour bed, and they point out that, although a number of workers, the first of whom published their results in 1923, have tried to show that the whole effect could be attributed to the indirect action, the experimental work of investigators at the Fondation Curie has shown conclusively that irradiation has a direct effect on the cell itself. Although not prepared to deny the possibility, they do not believe that any experiment has proved conclusively that the effects of radiation produce immunity to cancer in the human being, and they regard the changes obtained as purely local

The action of X rays and radium on the different parts of the body are discussed; the therapeutic reactions observed are well described, and also the excessive reactions which produce radionecrosis, and possibly later malignant changes. Statistics are adduced to show that the accusation that irradiation results in the early and frequent appearance of metastases in malignant tumours is without foundation The actual methods of treating lesions in every region of the body are set out in detail, and this section provides an excellent source of reference for all engaged in this work Radiotherapy is still largely a matter of experiment, and so much valuable experience has gone to the writing of this book that it cannot fail to be of great service.

Modern Advances in Diseases of the Throat

By Arthur Miller, F R C S Edin, D.L O, Surgeon for Diseases of the Ear, Nose, and Throat, French Hospital, London; Assistant Aurist, London County Council London. H K Lewis and Co, Ltd. 1934 Pp. 120. 10*s*. 6*d*

Notwithstanding the title of this little book, which in itself is rather ambiguous, Mr. Miller has not attempted to give a précis of the advances in our knowledge of the diseases which come within the domain of laryngology The greater part of the book is occupied by the problem of inflammation of the tonsil Mr Miller has provided a good and lucid discussion of the anatomy and physiology of the tonsils, and of most of the questions which arise in connexion with the operation for their removal. We can heartily recommend this portion of the work to the notice of the student and practitioner The two final chapters consist of notes on a variety of subjects, acute tonsillo-pharyngitis, septicæmia of tonsillar origin, quinsy, Vincent's disease, palatal adhesions, elongated uvula, and malignant disease of the tonsil and soft palate The subjects are mostly treated in too short and summary a fashion to make the information of great value There is an adequate bibliography at the end of each chapter.

The Medical Treatment of Disease

Fourth edition. By R. D Rudolf, C.B E, M.D., F.R C P, Professor of Therapeutics in the University of Toronto. University of Toronto Press. 1934 Pp 540. $4

Prof. Rudolf's book on treatment has the particular merit of individuality, and in the fourth edition this quality is fully maintained Many parts have been rewritten and some few additions have been made. It is easy to believe that the number of references given show little relation to the number consulted, for very little of importance appears to have escaped the author's eye. Many students will be grateful for little touches that will help them to fix a clinical picture in their minds As in previous editions, treatment of each condition is considered under the headings Diagnosis, Environment, Diet, Specific Treatment, and Symptomatic Treatment, it is good to see sufficient emphasis laid upon the first three of these At the same time drug treatment is fully covered and many alternative preparations and prescriptions are supplied

Prof Rudolf is to be congratulated once more upon giving a full and clear account of modern therapeutics for students or practitioners If he has at times erred on the side of dogmatism he has at least gained thereby on the side of clarity

Lectures on Medical Electricity

By ELKIN P CUMBERBATCH, M A, B M Oxon., D M R E Camb, F R C P, Medical Officer in Charge, Electrical Department, and Lecturer on Medical Electricity, St Bartholomew's Hospital London Henry Kimpton 1934 Pp 236 6s

ALL those who are responsible for teaching the medical student know how difficult it is for him to devote enough time to the many specialised departments of a big teaching hospital. In these collected lectures Dr Elkin Cumberbatch, whose electrical department at St Bartholomew's Hospital is a model of efficiency, has attempted to guide the student through many pitfalls, for a little knowledge of this elaborate subject can be dangerous indeed In 12 lectures, each followed by a scheme of practical demonstrations, the author takes in turn the various currents, their methods of use both medical and surgical, and the different conditions which may be benefited by them Electrical reactions of muscles and nerves as an aid to correct diagnosis in nerve injuries and nervous diseases occupy two lectures, the chapter on rays, their actions and contra indications, may, we hope, prevent the reader from ever reaching a stage in later life when he regards this form of treatment as a last resource for his failures The lectures are interspersed by notes in small print briefly summing up the salient points, these notes are consecutive and tell such a connected story that the less industrious could acquire useful information by reading only the small print passages

This excellent book should be of great benefit not only to the student, but also to the practitioner who wishes to revise his knowledge of the technique of the treatments he prescribes

The Practice of Absorption Spectrophotometry

Second edition By F TWYMAN, F R S, and C B ALLSOP, M A, Ph D London Adam Hilger Ltd 1934 Pp 144 12s 6d

THE subject of absorption spectroscopy, on which spectrophotometry is based, has assumed such importance in both theoretical and applied chemistry that a completely revised edition of this book has been called for, although it is only about two years since the first edition was published The present book is divided into two parts, the first of which contains an introduction to the theory of absorption, including a simple description of molecular spectra, and an account of various typical applications of absorption spectroscopy in which the interests and requirements of the theoretical, industrial, and biological chemist have each been kept in view In the second part the technique required in photo [illegible] measurements of absorption is described and explained. A chapter in this section discusses the conditions necessary for obtaining accuracy in the various types of measurement involved and is of primary importance The instruments described are those made by Messrs Adam Hilger Ltd., it is inevitable that this should be so, as the design and development of such instruments are largely due to this firm and to their distinguished head, Mr F Twyman, F R S, who is part author of the book Spectrophotometry is now carried out in the ultraviolet, visible, and infra red regions of the spectrum, and it will be appreciated that the optical components for each have to be made of materials that transmit the particular type of radiation employed

The chapter on the nature of absorption is of special interest even to the reader who has no more than a general knowledge of physics It indicates the problems that may arise, and is suggestive enough to stimulate those who are looking for new methods of attack One chapter is devoted to the detection of poisons and the control of purity in foodstuffs The well known work on the irradiation of ergosterol and on carotene are also examples of applications of spectrophotometry The book may be commended to workers already engaged in absorption measurements, and to students it should prove invaluable in helping them understand both the theoretical and the technical sides of an interesting subject

Franklin Paine Mall

By FLORENCE R SABIN Baltimore Johns Hopkins Press 1934 Pp 342 With 8 portraits 12s 6d

A PLEASANT and readable account by an old colleague of the man who did so much to establish the study and teaching of anatomy and embryology in America on sound lines Mall was born in America of German parents in 1862 and after good spells of work under His and Ludwig he taught anatomy at Clark and Chicago Universities until he was translated in 1893 to the Johns Hopkins, which was then beginning the reform of medical education in the United States with a most distinguished and effective staff Here he remained till his death in 1917 In education he stood for liberty, he reduced the time spent on anatomy to one half of what it had been and was more interested that his students should learn what standards were possible than that they should acquire a mass of facts In his own work he is best known for his researches on the structure of the liver, spleen, and heart, and on reticular connective tissue his constant interest in embryology culminated in the foundation of a special department of the Carnegie Institution Through his pupils and colleagues and his active interest in educational questions his influence spread very widely and he rose to a well deserved prominence The tale is well told but we should have been glad to hear more of the man apart from his work

Traité de médecine des enfants

Publié sous la direction de P NOBECOURT et L BABONNEIX Secrétaires de la rédaction J. CATHALA et J HUTINEL Tomes IV et V Paris Masson et Cie 1934 Pp 956 and 976 Fr 150 per vol

THE publication of these two volumes completes the new French system of pediatrics, the previous volumes of which have already been reviewed The fourth volume concludes the section devoted to diseases of the digestive tract, and deals with genito-urinary and bone diseases, intoxications, dermatology, ophthalmology, and psychiatry The fifth volume is devoted to neurology, therapeutics, and contains the general index. As in the rest of the work, considerable attention is devoted throughout to the pathology of the conditions described, and the illustrations are profuse. The section devoted to peritonitis, and the examination of the abdomen in childhood, is particularly full, though, curiously, no reference appears to be made to the possibility of infection by the genital route in pneumococcal peritonitis The section on liver (always something of a stumbling-block) is less good ; a number of tests of liver function are confidently described, although experience in this country and elsewhere has hardly endorsed their value The outstanding feature of these two volumes, if not of the whole work, is undoubtedly the section on neurology, which is probably unequalled in any system of pædiatrics of this kind. J. Lhermitte and L Babonneix, who appear to be responsible for the greater part of this section, are to be congratulated on the wealth of clinical and pathological material on which they have drawn. There are some odd discrepancies in the allocation of space. Epilepsy, for instance, is described and discussed at very considerable length, but the treatment, which after all most closely concerns the practising pædiatrician, is dismissed in 10½ lines, with only the briefest reference to the experience that has been gained during the last ten years in the use of ketogenic diets in this disease.

As we have previously noted, the least satisfactory feature of this important work is the collection of references to the literature, which are often inaccurate and mostly incomplete, and do not appear to have been compiled on any consistent plan. Apart from this, the matter, arrangement, and production of the whole system deserves high praise.

A Soldier in Science

The Autobiography of Bailey K. Ashford. London and New York: George Routledge and Sons, Ltd. 1934 Pp. 425. 12*s*. 6*d*

In this book Colonel Bailey Ashford, a sympathetic record of whose life appeared in our obituary columns last week from the pen of Colonel Clayton Lane, sets out here the story of the discovery with which his name is honourably connected, prefacing it with interesting family details He is able to trace back 300 years an English pedigree remarkable on the mother's side by the observation of those traditions of essential Puritanism which led to the original emigration of his ancestors and their similars Bailey Ashford joined the medical service of the American Army in time to be sent to Puerto Rico during the Spanish War, and, almost by accident, arrived at the true origin of a widespread condition of anæmia in the island, the condition appearing almost to be the normal road to death, so prevalent was it Under a section entitled Arms and the Microscope he describes the first campaign against the disease, and the vivid nature of his personal narrative brings out the drama of a story of scientific research being interrupted by the official duties of a medical officer with the army Ashford attributed the success of the campaign against hookworm disease in Puerto Rico, which followed upon the discovery of its origin, to the proselytising work of those who had been cured. The majority of such patients could not read or write, but by word of mouth they expatiated on their cures, and within five years of the discovery the United States legislature passed a Bill appropriating a substantial sum of money to the carrying on of the remedial work Other chapters deal, in the same vivid manner, with the author's activities in Europe during the war, where he organised a school for medical officers at Langres, and in this connexion visited British hospitals and dressing stations on the Western Front with results which enabled him to make many picturesque and sometimes very humorous comments The book is interesting, unconventional, and amusing, and the autobiographer introduces himself, always modestly, as one we should like to have known.

Common Skin Diseases

Second edition General Practice Series By A. C Roxburgh, M A, M.D., B Ch Camb., F R C.P. Lond , Physician to the Skin Department, St. Bartholomew's Hospital, London: H. K Lewis and Co., Ltd. 1934 Pp 370. 16*s*.

In the second edition of this admirable little text-book chapters on congenital affections of the skin, atrophy, sclerosis, and on the vesicular and bullous eruptions, which had been written, but for some unstated reason omitted in the first edition, are inserted and complete an efficient piece of work. It is practical, up to date, breezily written, and based, not on the writings and opinions of others so much as on the observation and experience of its author The astute selection of and excellent reproduction of many illustrations is another good feature Among these the three half-tone photomicrographs (pp 131 and 133) are noteworthy as an object-lesson in the characteristics of the ringworm mycelium, showing how completely it differs from the fat droplets, with which, by the novice, it is often confused It is essential that every physician who has to deal with diseases of the skin should know how to make and interpret simple microscopic examinations for diagnosis, and those who are not in constant practice will be glad to have such reminders as are here supplied.

The Casting of a Pebble

By Elsie Grey Turner, author of "Earnest Earth." Newcastle-upon-Tyne · Andrew Reid and Co., Ltd. 1934. Pp 310 8*s*. 6*d*.

This is a book of travel in which an observant woman, well read and a linguist, has set down the impressions derived from visits to Spain and Scandinavia, Poland and Czechoslovakia, Hungary and Italy ; the object of the book is revealed on the title-page in a quotation from the words of Napoleon "Whoever troubles the peace of Europe wants civil war." The times we live in are such that any appeal to our minds or our interests, supplying arguments for international arbitration rather than sabre-rattling, clearly justifies its appearance These vivid and discursive chapters pretend to no particular medical interest, but doctors and others will find in them material for thought and amusement

The Patient and the Weather.—We reviewed recently (Nov. 3rd, p. 991) a book by Dr W. F Petersen under this title, and we have now heard from the publishers, Messrs. Edwards Brother, Inc., Ann Arbor, Michigan, that the price is $5.

THE LANCET

LONDON SATURDAY, NOVEMBER 24, 1934

ASTHMA REVIEWED

OPINION has changed a good deal since the days when asthma was regarded as a neurosis or as a symptom of nasal abnormality It is now generally accepted that the disorder is a clinical entity and not a syndrome of varied ætiology, that it has a close connexion with conditions such as hay-fever and eczema, a connexion based on hypersensitiveness to common proteins, and that these diseases often run in families Perhaps the pendulum has swung too far and the hereditary and constitutional aspects have been overstressed Investigations by Dr R S **BRUCE PEARSON** mentioned in the latest report of the Asthma Research Council[1] show that latent allergy and the tendency to develop protein hypersensitiveness can not infrequently be demonstrated in apparently normal people, and it would therefore be unreasonable in the treatment of asthma to concentrate attention entirely on such hypersensitiveness, or to neglect the factors which may determine the presence or latency of symptoms In drawing attention this year to the value of physical exercises for asthmatics, the Council issues a pamphlet[2] containing details and illustrations which ought to be really helpful to practitioners Ordinary breathing exercises, whose object is to increase the expansion of the chest, are of no use in asthma, since the lungs are already distended too much, and the aim is to restore the lungs and chest cavity to their normal size The exercises recommended are designed to teach the patient to empty the lungs, to use the lower part of the chest as well as the upper part, and to employ diaphragmatic breathing

From Guy's Hospital interesting results are reported from a psychological study of asthmatic children Tests confirmed the general impression that they tend to be of superior intelligence, unusually high intelligence quotients being obtained in some of them In none of the cases studied was there evidence of marital disharmony, and in this they differ from "problem children," who seem often to be the product of strife in the home Asthmatic children are usually over protected and fussed by their parents and the attacks are induced by a state of anxious expectation The attacks almost always cease when the children are taken away from home, but recur as soon as they come back—even at the railway station Hence it is not surprising that very satisfactory results are reported from psychological treatment In the field of specific therapy the treatment of hay fever has been improved, the injections of pollen being controlled by skin tests and the aim being complete desensitisation of the patient Practically all cases of hay-fever can now be relieved Much larger doses of pollen are used than formerly, but provision has been made for adequate supplies for treatment in the future It is suggested that in asthma the majority of the patients are sensitive to proteins which they are constantly breathing, such as house-dust, feathers, orris root (face powder), pollens, and horse and other animal hairs, and this suggestion appears reasonable when we consider the relief obtained by air-conditioning, as developed by VAN LEEUWEN Efforts to desensitise asthmatics by the injection of a mixed solution of the common inhalants have been attended by a certain measure of success, but the dosage is still empirical and the skin reactions are rarely influenced by the treatment Sensitisation in asthma is so commonly multiple that it is doubtful whether any generally practicable treatment will be evolved along these lines

The clinician to day is largely dependent on the laboratory worker for inspiration, and it is good to see that work is being carried out on the mode of action of adrenaline, and on the chemical changes at the nerve endings in the bronchi The advisability of a massed attack on a single disease, such as the Asthma Research Council is directing, is always open to doubt It is true that rickets and several tropical diseases have yielded to a similar attack, but there can be few so sanguine as to believe that ten years of directed research on peptic ulcer or hyperpiesia or epilepsy would necessarily solve the problems of these diseases, and the same is true of asthma Nevertheless the Council has reason to be well satisfied with the investigations it has inspired and with the treatment given at its clinics Readers of the present report will look forward to the summary of research work carried out under its auspices since its inception in 1927, which is promised from the pen of SIR HUMPHRY ROLLESTON Meanwhile, it appears that the problem has been clearly outlined in its clinical aspects and that attention is now turning more exclusively to therapeutic procedures Asthma is a very common disease, and now that the research clinics are becoming widely known and the value of their investigations is appreciated, there is perhaps a danger of their attracting too many patients and having too little time for the specific research purpose for which they were founded Be this as it may, the public must certainly not be allowed to forget that the Council depends on voluntary contributions for the continuation of its valuable activities

ROBERT MORANT[3]

ALL should know about ROBERT MORANT, and the delay in publishing his life, brought about by circumstances which seemed regrettable at the time, has proved fortunate For when he died only what he had done could be enumerated, but reading his record 14 years later we see in due diseases of the digestive tract, and deals with genito-urinary and bone diseases, intoxications, dermatology, ophthalmology, and psychiatry. The fifth volume is devoted to neurology, therapeutics, and contains the general index. As in the rest of the work, considerable attention is devoted throughout to the pathology of the conditions described, and the illustrations are profuse. The section devoted to peritonitis, and the examination of the abdomen in childhood, is particularly full, though, curiously, no reference appears to be made to the possibility of infection by the genital route in pneumococcal peritonitis. The section on liver (always something of a stumbling-block) is less good; a number of tests of liver function are confidently described, although experience in this country and elsewhere has hardly endorsed their value. The outstanding feature of these two volumes, if not of the whole work, is undoubtedly the section on neurology, which is probably unequalled in any system of pædiatrics of this kind. J. Lhermitte and L. Babonneix, who appear to be responsible for the greater part of this section, are to be congratulated on the wealth of clinical and pathological material on which they have drawn. There are some odd discrepancies in the allocation of space. Epilepsy, for instance, is described and discussed at very considerable length, but the treatment, which after all most closely concerns the practising pædiatrician, is dismissed in 10½ lines, with only the briefest reference to the experience that has been gained during the last ten years in the use of ketogenic diets in this disease.

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[1] Copies of the report may be had free from the Secretary of the Asthma Research Council, c o King's College Strand London W.C.2

[2] Copies of this pamphlet are obtainable for 2s post free from the Secretary of the Council at King's College

[3] Sir Robert Morant By Bernard M Allen M A LL.D London Macmillan and Co, Ltd. 1934 Pp 311 12s 6d

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A Soldier in Science

The Autobiography of BAILEY K. ASHFORD. London and New York: George Routledge and Sons, Ltd. 1934. Pp. 425. 12*s.* 6*d.*

IN this book Colonel Bailey Ashford, a sympathetic record of whose life appeared in our obituary columns last week from the pen of Colonel Clayton Lane, sets out here the story of the discovery with which his name is honourably connected, prefacing it with interesting family details. He is able to trace back 300 years an English pedigree remarkable on the mother's side by the observation of those traditions of essential Puritanism which led to the original emigration of his ancestors and their similars. Bailey Ashford joined the medical service of the American Army in time to be sent to Puerto Rico during the Spanish War, and, almost by accident, arrived at the true origin of a widespread condition of anæmia in the island, the condition appearing almost to be the normal road to death, so prevalent was it. Under a section entitled Arms and the Microscope he describes the first campaign against the disease, and the vivid nature of his personal narrative brings out the drama of a story of scientific research being interrupted by the official duties of a medical officer with the army. Ashford attributed the success of the campaign against hookworm disease in Puerto Rico, which followed upon the discovery of its origin, to the proselytising work of those who had been cured. The majority of such patients could not read or write, but by word of mouth they expatiated on their cures, and within five years of the discovery the United States legislature passed a Bill appropriating a substantial sum of money to the carrying on of the remedial work. Other chapters deal, in the same vivid manner, with the author's activities in Europe during the war, where he organised a school for medical officers at Langres, and in this connexion visited British hospitals and dressing stations on the Western Front with results which enabled him to make many picturesque and sometimes very humorous comments. The book is interesting, unconventional, and amusing, and the autobiographer introduces himself, always modestly, as one we should like to have known.

Common Skin Diseases

Second edition. General Practice Series. By A. C. ROXBURGH, M.A., M.D., B.Ch. Camb., F.R.C.P. Lond., Physician to the Skin Department, St. Bartholomew's Hospital, London. H. K. Lewis and Co., Ltd. 1934. Pp. 370. 16*s.*

IN the second edition of this admirable little text-book chapters on congenital affections of the skin, atrophy, sclerosis, and on the vesicular and bullous eruptions, which had been written, but for some unstated reason omitted in the first edition, are inserted and complete an efficient piece of work. It is practical, up to date, breezily written, and based, not on the writings and opinions of others so much as on the observation and experience of its author. The astute selection of and excellent reproduction of many illustrations is another good feature. Among these the three half-tone photomicrographs (pp. 131 and 133) are noteworthy as an object-lesson in the characteristics of the ringworm mycelium, showing how completely it differs from the fat droplets, with which, by the novice, it is often confused. It is essential that every physician who has to deal with diseases of the skin should know how to make and interpret simple microscopic examinations for diagnosis, and those who are not in constant practice will be glad to have such reminders as are here supplied.

The Casting of a Pebble

By ELSIE GREY TURNER, author of "Earnest Earth." Newcastle-upon-Tyne: Andrew Reid and Co., Ltd. 1934. Pp. 310. 8*s.* 6*d.*

THIS is a book of travel in which an observant woman, well read and a linguist, has set down the impressions derived from visits to Spain and Scandinavia, Poland and Czechoslovakia, Hungary and Italy; the object of the book is revealed on the title-page in a quotation from the words of Napoleon "Whoever troubles the peace of Europe wants civil war." The times we live in are such that any appeal to our minds or our interests, supplying arguments for international arbitration rather than sabre rattling, clearly justifies its appearance. These vivid and discursive chapters pretend to no particular medical interest, but doctors and others will find in them material for thought and amusement.

THE PATIENT AND THE WEATHER.—We reviewed recently (Nov. 3rd, p. 991) a book by Dr. W. F. Petersen under this title, and we have now heard from the publishers, Messrs. Edwards Brother, Inc., Ann Arbor, Michigan, that the price is $5.

THE LANCET

LONDON. SATURDAY, NOVEMBER 24, 1934

ASTHMA REVIEWED

OPINION has changed a good deal since the days when asthma was regarded as a neurosis or as a symptom of nasal abnormality It is now generally accepted that the disorder is a clinical entity and not a syndrome of varied ætiology, that it has a close connexion with conditions such as hay-fever and eczema, a connexion based on hypersensitiveness to common proteins, and that these diseases often run in families Perhaps the pendulum has swung too far and the hereditary and constitutional aspects have been overstressed. Investigations by Dr R S BRUCE PEARSON mentioned in the latest report of the Asthma Research Council[1] show that latent allergy and the tendency to develop protein hypersensitiveness can not infrequently be demonstrated in apparently normal people, and it would therefore be unreasonable in the treatment of asthma to concentrate attention entirely on such hypersensitiveness, or to neglect the factors which may determine the presence or latency of symptoms In drawing attention this year to the value of physical exercises for asthmatics, the Council issues a pamphlet[2] containing details and illustrations which ought to be really helpful to practitioners Ordinary breathing exercises, whose object is to increase the expansion of the chest, are of no use in asthma, since the lungs are already distended too much, and the aim is to restore the lungs and chest cavity to their normal size The exercises recommended are designed to teach the patient to empty the lungs, to use the lower part of the chest as well as the upper part, and to employ diaphragmatic breathing.

From Guy's Hospital interesting results are reported from a psychological study of asthmatic children Tests confirmed the general impression that they tend to be of superior intelligence, unusually high intelligence quotients being obtained in some of them In none of the cases studied was there evidence of marital disharmony, and in this they differ from "problem children," who seem often to be the product of strife in the home Asthmatic children are usually over protected and fussed by their parents and the attacks are induced by a state of anxious expectation The attacks almost always cease when the children are taken away from home, but recur as soon as they come back—even at the railway station Hence it is not surprising that very satisfactory results are reported from psychological treatment In the field of specific therapy the treatment of hay-fever has been improved, the injections of pollen being controlled by skin tests and the aim being complete desensitisation of the patient Practically all cases of hay-fever can now be relieved Much larger doses of pollen are used than formerly, but provision has been made for adequate supplies for treatment in the future It is suggested that in asthma the majority of the patients are sensitive to proteins which they are constantly breathing, such as house dust, feathers, orris-root (face powder), pollens, and horse and other animal hairs and this suggestion appears reasonable when we consider the relief obtained by air-conditioning, as developed by VAN LEEUWEN Efforts to desensitise asthmatics by the injection of a mixed solution of the common inhalants have been attended by a certain measure of success, but the dosage is still empirical and the skin reactions are rarely influenced by the treatment Sensitisation in asthma is so commonly multiple that it is doubtful whether any generally practicable treatment will be evolved along these lines

The clinician to-day is largely dependent on the laboratory worker for inspiration, and it is good to see that work is being carried out on the mode of action of adrenaline, and on the chemical changes at the nerve-endings in the bronchi The advisability of a massed attack on a single disease, such as the *Asthma Research Council* is directing, is always open to doubt It is true that rickets and several tropical diseases have yielded to a similar attack, but there can be few so sanguine as to believe that ten years of directed research on peptic ulcer or hyperpiesia or epilepsy would necessarily solve the problems of these diseases, and the same is true of asthma Nevertheless the Council has reason to be well satisfied with the investigations it has inspired and with the treatment given at its clinics Readers of the present report will look forward to the summary of research work carried out under its auspices since its inception in 1927, which is promised from the pen of Sir HUMPHRY ROLLESTON Meanwhile, it appears that the problem has been clearly outlined in its clinical aspects and that attention is now turning more exclusively to therapeutic procedures Asthma is a very common disease, and now that the research clinics are becoming widely known and the value of their investigations is appreciated, there is perhaps a danger of their attracting too many patients and having too little time for the specific research purpose for which they were founded Be this as it may, the public must certainly not be allowed to forget that the Council depends on voluntary contributions for the continuation of its valuable activities

ROBERT MORANT[3]

ALL should know about ROBERT MORANT, and the delay in publishing his life, brought about by circumstances which seemed regrettable at the time, has proved fortunate For when he died only what he had done could be enumerated, but reading his record 14 years later we see in due proportion the greatness of the tasks which he discharged, and recognise the fruitful results. We can appreciate also how, in the varying milieux where his duty lay, two aspirations were consistently dominant—the introduction of order and discipline into public affairs, and the placing of the general weal in front of all things

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[1] Copies of the report may be had free from the Secretary of the Asthma Research Council c/o King's College Strand London W C 2

[2] Copies of this pamphlet are obtainable for 2s post free from the Secretary of the Council at King's College

[3] Sir Robert Morant By Bernard M Allen M A LL D London Macmillan and Co, Ltd. 1934 Pp 311 12s 6d

Morant was by tradition, inclination, and home influence a deeply religious lad At Winchester and Oxford his intention to take Holy Orders was maintained, and a high place in the theological tripos seemed to confirm it. But the young man, honesty exemplified, felt that he could not sufficiently subscribe to doctrine to become a minister. Yet his academic honours, worked for with that object and often under great strain, were a direct passport to no other vocation. No doubt disappointed, he became an assistant master in a private school, continued voluntary work among the poor which he had taken up from boyhood in response to his religious bent, and held various private tutorships He threw himself with zest into his duties, and these, despite their limited sphere, gave him rooted belief in the value of early training for the individual and systematic education for the State; and he perfected now a natural gift for sympathy with the young And this last it was that provided him with a curious opening For through the influence of a parent of certain of his pupils, who had detected his unusual qualities, he found himself tutor in a Siamese noble family, and shortly afterwards the education of the Royal children was confided to him This led him to formulate a complete scheme of education for Siam, and also involved him in the political affairs of the country, so that he became a confidential adviser of the Government with no really defined status Suddenly, when it seemed that his life work might lie in Siam, the domestic politics of that country were involved in the foreign politics of France and England, Morant had to resign from his informal position, when the collapse of the educational scheme, to which he had given over five years of devoted work, followed. He returned to England with a knowledge of the theory and practice of education, based on fundamental creative labour in Siam added to experience at Winchester and Oxford, but, as at the end of his Oxford career, there appeared to be no outlet for his gifts and energies. And again the opening arrived in a curious manner. He was selected for a subordinate post in the Board of Education on the excellent, if uncommon, grounds that he possessed the necessary equipment for the vacant post Proof of these he began to furnish at once, and in a brief space of time he was found on all sides to know more than anyone else concerning the difficulties ahead of educational reform—to have large vision and a colossal grasp of fact, backed by tireless industry. The biographer describes in dated detail the Parliamentary activities associated with national education from 1895 for the next 12 years, and this exact chronicle of political and departmental manœuvring and accomplishment is justified, for throughout the narrative Morant appears as the man who was invariably turned to for the introduction of order into chaos In every phase of negotiations in which political obligations and sectarian influences played their part, the advice of Morant was relied on, and, turn as events would, he kept a direct line towards the main objectives while dealing capably with side issues. The Education Act, 1907, resulted, and at the Board of Education the swiftest promotion on record in the Civil Service found Morant head of his department eight years after the start in Government service.

Yet a third time there came an unlooked for break in Morant's career A chance indiscretion in the midst of a political upheaval laid him open to the attacks of politicians and teachers, and the devotion which he had shown for education was forgotten. Morant, after nine years in developing the work of his department in accordance with the high aspirations of himself and of many others, found it necessary to leave the Board and begin again from the beginning. The closing phase of his life is the one which brought him into intimate connexion with the medical profession, and again the opportunity was as unexpected as had been the Siamese appointment and the entrance into the Civil Service. Mr Lloyd George requested him to take the responsibility of bringing the new Insurance Bill into operation, and appointed him chairman of the National Health Commission Mr. Allen's story closes with a short summary of the circumstances which led up to the Medical Insurance Act and the amending Act of 1913 Here we see Morant countering the impending paralysis of the new legislation owing to the upheaval of war; we see him working for the establishment of a Ministry of Health; and we can identify in all that is set down the same Morant giving play to his ideals, the introduction of order and discipline, and the promotion of the public good While the revolution in medical practice, to which it now became his duty to give effect, was misunderstood by many and repugnant to a large proportion of doctors, Morant recognised at once that the substantial cooperation of the medical profession would be needed Now to them he was an unknown man, he was mistrusted, almost feared, as an instrument for introducing Government tyranny Those who were in medical practice at the time will remember the bitter controversies which centred around the institution of medical insurance, but they will remember also how the medical profession found in Morant not a bureaucrat or an arrogant official but a sincere friend, one who understood the difficulties in which professional life was going to be placed, one who shared with them a sincere desire to give adequate medical service to one-third of the population who had never experienced its benefits, and one who was as clear as themselves as to the value of medical research. His sudden death at the age of 57 was directly associated with the unabating strain of work conducted in the intense manner which was the only manner that he knew He had lived a consistent life The sense of duty displayed as a youth, and the enjoyment of fighting which had characterised the young man, were till the end with him When he died the feeling of the whole medical profession was that a friend had been lost to them

CANCER CELLS UNDER IRRADIATION

As radiotherapy develops it becomes increasingly evident that we are still far from understanding the way in which it acts To see a tumour of the skin disappear under the influence of relatively small doses of radium or X rays, leaving behind an almost normal surface, is to receive a vivid impression that malignant cells are especially sensitive to irradiation Yet this idea had to be abandoned when it was found that many tumours do not readily react to the rays, while the large doses which do affect them will also damage the adjacent normal tissues As Dr MAX CUTLER has lately written "It is quite evident that the response of tumours to irradiation is governed by a group of factors including physical, histologic, physiologic, pathologic and clinical, which in combination with one another determine the ultimate result The failure to recognise the relative importance of all the principles that influence the ultimate result may lead to errors in interpretation of radiophysiologic phenomena"[1] It is clear that an investigation of these different factors is necessary for the further development of radiotherapy, and it is fortunate that the spontaneous and the transplantable tumours of mice and rats present material eminently suitable for their experimental examination

The Eleventh Scientific Report of the Imperial Cancer Research Fund (p 1185) records continuation of those inquiries into the action of radium which occupied the greater part of the tenth report published two years ago The study of the regression of transplantable tumours under the influence of radium, then described by Dr W CRAMER, has been extended by him to the spontaneous mammary tumours of the mouse, which, like the corresponding human tumours, show great differences in radio-sensitivity The process of regression of the radio-sensitive spontaneous tumours is found to be identical with that described for transplantable tumours, and this removes the objection often made that observations on transplantable tumours do not apply to those arising de novo In the latter there is again evidence of a partial damage to the malignant cells—damage, however, not sufficient in itself to be directly lethal. This partial damage is followed by a macrophage invasion of the irradiated tumour, leading to an overgrowth of young connective tissue which eventually displaces the tumour parenchyma completely and thus effects a cure In the radio-resistant growth, irradiation is followed by an arrest of growth indicating damage to the malignant cells, but the macrophage invasion and the subsequent overgrowth of the connective tissue is less complete, or may even fail altogether, so that a nodule of malignant tissue is left behind in what may be called a dormant condition When a comparison is made between the histological structure and the reaction to radium it is found that, as in human beings, the more differentiated type of growth is usually radio-resistant, although there are some exceptions to this rule The question of radio-resistance is thus narrowed down to the question why, in some types of tumours, the connective tissue reaction fails to appear. Dr CRAMER points out that one of the fundamental differences between cancer cells and the cells of normal epithelium is the altered relation of the parenchyma to the connective tissue, and that the disappearance of a malignant growth may be ascribed to a disturbance of this relationship In the radio-sensitive tumours the dominating influence which the unrestrained malignant cells exert on the stroma is weakened when they are damaged by irradiation, so that the stroma now overgrows the still viable but damaged parenchyma Why in the more highly differentiated radio resistant types of tumours the damaged parenchyma retains its dominating influence is a question still to be answered

Through irradiation a radio resistant tumour may cease to grow—its malignant cells being temporarily dormant—but sooner or later there will be a recurrence because the cells will recover This type of recurrence, it is pointed out, must be clearly distinguished from that due to a new process of carcinogenesis It is known from experimental studies that if a large area has been subjected to chronic irritation, a single malignant new growth will usually arise in a sharply circumscribed area But this tumour is surrounded by an area of tissue in a precancerous condition, and when the tumour itself is excised another one may arise in the precancerous area left behind The same thing happens when a tumour is treated with radium in such a way that the (possibly precancerous) neighbouring tissue is left untreated, the tumour itself will disappear but new ones may subsequently make their appearance in the non-irradiated area This event is responsible for some of the apparent failures of radiotherapy, and it can be avoided by wide irradiation in cases where it is likely that a tumour has developed as the result of chronic irritation extending over an area bigger than that occupied by the tumour itself The observations on spontaneous tumours confirm the conclusion, reached from experiments with transplantable tumours, that the effect of irradiation is entirely local If there are two tumours and only one is irradiated, the irradiated tumour alone will regress and the other will go on growing

A further analysis of the process of regression is made possible by irradiating cancer cells in vitro and then transplanting them One can thus isolate the direct effect on cancer cells from the effects due to the subsequent reactions By this method Mr H G CRABTREE and Dr CRAMER have been able to show that the sensitivity of a malignant cell to irradiation is not, as was formerly
a fixed and inherent property of the ce
be varied experimentally within very
By altering the conditions under w
irradiated it was found that the

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[1] Jour Amer Med Assoc Oct 20th 1934 p 1204

of malignant cells depends on the functional condition of their respiratory mechanism. When this mechanism is in the oxidised phase the cell is radio-sensitive; contrariwise, when it is in the reduced phase the cell is highly radio-resistant This explains the clinical experience that in patients suffering from anæmia a tumour does not react well to irradiation, and admits at once of the important practical conclusion that an ample blood-supply to the tumour is essential to successful treatment It also suggests possibilities of enhancing the radio-sensitivity of tumours by substances or agencies which act on the respiratory mechanism Curiously enough, changes in the glycolytic mechanism, which distinguishes cancer cells from normal cells, were found not to affect the radio-sensitivity, and such factors as changes in the hydrogen-ion concentration, or in the amount of glucose present in the medium, left the sensitivity unaltered One important theoretical conclusion which can be drawn from these results is that the primary damage done to a cell by irradiation is done through the respiratory mechanism. Since the conditions which alter the sensitivity towards beta rays also alter its reaction to gamma rays, it follows that the biological effect of gamma rays on cancer cells in vitro is essentially the same as that of beta rays In a further communication Mr CRABTREE shows that the respiration of tissues, whether normal or malignant, when kept in a Ringer solution buffered with a phosphate solution, is not as efficient as when the medium is buffered with a bicarbonate solution—indicating that the phosphate Ringer solution damages in some unknown way the respiratory system. Again, it was found that the effect of radium on cancer cells kept in a phosphate-Ringer solution is greater than on cells kept in a Ringer-bicarbonate solution

Dr. E S HORNING has studied the changes in the inorganic constituents of cancer cells by the method of micro-incineration. It is possible in this way to obtain a picture which gives with astonishing clearness the distribution of the inorganic salts within the cells He finds in the first few hours after irradiation a slight but definite increase in the ash distribution, which he ascribes to a direct effect of radiation Later the cells which become enlarged and multinucleated and are evidently undergoing degeneration show an increase in the inorganic constituents which grows more and more evident; but these changes are probably attributable to a secondary effect of irradiation and due to the action of radium on the tumour bed and the subsequent reaction of repair

ANNOTATIONS

NEW ROAD TRAFFIC LAW

THE Minister of Transport last week appointed New Year's Day as the date when Part II. of the recent Road Traffic Act will come into force Part II. includes Section 16 which is important to hospitals and to doctors who from time to time give emergency treatment to traffic casualties In case of bodily injury (including fatal injury) the person using the vehicle which caused the accident must, on a claim being made, pay the practitioner a fee of *12s 6d.* for each patient and a mileage fee of *6d.* per mile for any distance over two miles If more than one practitioner administers treatment, the first to do so will be the person entitled to make the claim This section applies to hospitals (i e , institutions, not being institutions carried on for private profit, which provide medical or surgical treatment for in-patients) as though hospital were substituted for medical practitioner If the accident is due to the negligence of some party other than the vehicle-user, the latter is entitled to recover from the negligent party the amount which the new law requires to be paid to doctor or hospital. Doctor and hospital can recover the statutory fee as a simple contract debt

Other important sections in Part II. are those which try to make insurance more water-tight The public has had the impression, since the Act of 1930 was passed, that any persons injured by a negligent motorist would always be able to recover damages by means of the system of compulsory insurance The insurance companies, however, issued policies containing various conditions and restrictions, and naturally declined to pay the policy-holder if the conditions or restrictions were infringed The proprietor of a garage and motor-car repairing business, for instance, might have insured his private car under a policy which stipulated that the car should not be used for the purpose of the business. If a pedestrian was negligently run over by the car when it was being used to tow a customer's broken-down car to the garage for repair, the company would refuse to pay on the policy and the injured pedestrian would suffer in consequence. In future it is to be the duty of the insurance company to satisfy judgments against persons insured for third-party risks If policies contain any limitations as to the age or the physical or mental condition of the driver, or as to the condition or horse-power or value of the car, or as to the number of persons or the weight carried, or as to the use of a wrong identification mark, those limitations will be void after Jan 1st. Naturally the insurance companies, which do not conduct their business for purely altruistic purposes, will expect to be entitled to raise premiums to cover the increased liabilities The new tariff will doubtless be published in due course The companies which are authorised to conduct this kind of third-party risk insurance have announced that there is no need for a policy-holder to return his existing certificate or to communicate with the company as to the conditions applicable after Jan. 1st If he receives no notice from his insurance company, he can assume that an existing certificate which runs after New Year's Day will require no alteration and will be valid for all the purposes of the new Act

DEFICIENCY SYMPTOMS IN CHRONIC GASTRO-INTESTINAL DISEASE

COMPARISON of the outstanding features of experimental deficiency diseases with those of certain long-recognised but obscure general diseases not known to be associated with dietetic defects has gradually been followed by the explanation of many resemblances previously mysterious; the discovery of underlying intestinal defects in many of these obscure disorders has explained how they may be due to faulty nutrition, even though they develop on a satisfactory diet "Starvation in the midst of plenty" was the phrase applied by Izod Bennett, Hunter, and Vaughan in their study of such defects in cœliac disease, "conditioned deficiency diseases" is an illuminating description recently used by L J Witts in writing on the nutritional anæmias Such phenomena as the hyperchromic anæmia seen in some cases of gastrocolic fistula, or the secondary anæmia which is often a serious sequel to the excision of large portions of the stomach are examples of these diseases The concept is probably widely applicable and it seems likely that there are many forms of chronic intestinal disease in which the symptoms and signs extend far beyond the local site of disorder Thus in a recent paper[1] Dr J Goudsmit of Zaandam describes a series of cases of chronic gastro intestinal disease associated with anæmia, diminution in the tendon reflexes, and frequently spondylonychia or loss of the surface epithelium of the tongue Some of his patients had complete achlorhydria, while in others the gastric secretion was normal In a few of them abdominal pain was the presenting symptom, but in the majority there was a vaguer chronic intestinal disturbance which could only be defined as "stomach trouble", flatulence, occasional diarrhœa, bouts of vomiting, and a constant feeling of fullness were symptoms present in varying degree from case to case, the clinical picture being dependent much more on the remote signs and symptoms than on what could reasonably be considered the underlying cause

Such clinical observations leave many fundamental problems unsolved, it is clear that until we can say in any particular case whether the deficiency arises from a primary fault of the absorbing mechanism of the gut or whether an artificially created steatorrhœa prevents adequate absorption of the products of digestion, we cannot sufficiently explain the results Similarly, until the experimental biochemist can provide more exact information about the ultimate primary accessory factors in our food and the effects of their deficiency we shall not be in a position to say which of these factors are lacking in these complicated cases Allowing for these limitations, however, the immediate importance of clinical observations such as Goudsmit's cannot be questioned

EPSOM COLLEGE

The Governors of Epsom College have been approached cogently by Sir Raymond Crawfurd, Chairman of the Council of the College and asked to bring the claims of the College before those who might support the institution Certainly the need for an increase of income is pressing, there are, for example, [illegible] applicants for the pensions only 3 of which are vacant and in the majority of these cases the applicants have only the old age pension and perhaps a small grant from the Royal Medical Benevolent Fund on which to live There are again more orphan sons of medical men seeking admission on the Foundation than room can be found for, while the Council have early this year increased the number of Foundationers from 30 to 36 at an enhanced expenditure of little short of £1000 per annum The College receives from the medical profession a generous annual income and the [illegible] of benefactions, about £10,000 per annum is [illegible] times larger than the assured income out of which of course administrative costs and debenture interest have to be paid The meaning of this is that to meet the growing pressure moneys from bequests have been utilised for immediate needs instead of being invested There is therefore, real need for special effort to enrol more governors and the claims of the College to public support will, it is hoped, be advocated by the governors Sir Raymond Crawfurd's letter is accompanied by a list of donations and subscriptions to the College corrected up to Dec 31st, the cost of publication being assisted by the Medical Insurance Agency The Governors have all received a copy of the list, and to those of them who are medical men or women it is suggested that the list should be allowed to lie on the waiting-room table

TESTS FOR RESPIRATORY EFFICIENCY

Dr Alan Moncrieff has attempted to devise a test for estimating the efficiency of the respiratory system, comparable to those which are used for renal function In the historical introduction to his thesis[1] he gives good reasons for choosing six of the available tests for detailed investigation, taking into account not only the likelihood of their yielding useful data but also their expediency, all of them can be completed in five to six minutes, and require only a special type of spirometer and a mercury manometer Four of the tests are measurements simple or calculated, and two are so called performance tests[2] in which the patient is required to make a voluntary effort in the shape of first blowing up, and then sustaining, a column of mercury Of the measurements one, the vital capacity, may be considered as anatomical in nature, and the other three as physiological, the first of the latter gives the amount of pulmonary ventilation required for the intake of 100 c cm of oxygen, the second the proportion of inspired air in each respiration which does not come into contact with the functional respiratory surface of the lungs (dead space) and the third the relation of duration of expiration to duration of inspiration The difficulty of obtaining reliable normal values for the tests is discussed, and reasons given for selecting the standards used in this investigation The tests have been performed on 86 hospital patients and, including repetitions, 90 complete sets of results are presented The patients are classified clinically into five groups—good, fairly good, fair, poor, and bad—on the basis of their apparent degree of "respiratory failure" A separate table is devoted to each group, giving the numerical result of each test on every patient in that group, the results of each test are then averaged for each group, and the figure recorded in a sixth table All of these averages fall below the accepted normal standards, and in the case of three of the tests—namely, the vital capacity, the ratio of dead space to tidal air, and the manometer-endurance test—they show a progressive falling off from the normal as the groups are taken in order In the remaining three tests they appear to bear no constant relation to the clinical condition of the patients So far the investigation is highly satisfactory There is no doubt on theoretical grounds, about the excellent choice of tests nor that when a number of cases are taken together the average results of at least three of them agree with the clinical findings

Nevertheless the purpose of the inquiry is presumably to see if it is possible to approach the individual patient with certain tests and classify him according to the figures obtained To do this, on the present data one would have to assume, for instance that 76 per cent of the normal vital capacity is typical of the "fairly good" group 69 per cent of the "fair" group and so on according to Moncrieff's averages so that patients yielding vital capacities of 74 per cent and 71 per cent would be noted respectively as "fairly good" and "fair" We have gone through the figures given for the three tests mentioned above as most promising in the case of each patient, and recorded in respect of each the group into which he falls.

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[1] Nederlandsch Tijdschr v Geneesk 1934 lxxx 3122

[1] Med Research Coun Spec Rep Ser No 198 H.M Stationery Office Pp 82 1s

[2] The advantages and disadvantages of such tests are discussed by Prof [illegible] in his [illegible] of Muscular Activity" published in The Lancet, 1933 ii 375

In 44 out of 90 cases, each test puts the patient into a different group, so that these individuals are unclassifiable In five of the remaining cases all the tests agree, but the group to which the patient is in consequence allotted agrees with his clinical grouping in only three instances; in the other two he is wrongly placed. In 41 cases two out of the three tests agree, but only in seven does the patient fall into his correct group on this criterion; in the other 34 he falls into a different group. Therefore accepting the clinical classification as correct—which, of course, it may not be—only ten patients, on the basis of the tests, fall into the right group; 36 fall into the wrong group, and 44 cannot be grouped On these grounds we cannot go all the way with Dr. Moncrieff when he says that "some objective estimation of the degree and type of respiratory inefficiency can be made, and the future use of this in certain branches of medicine and surgery is indicated" One possibility, inherent in this statement, has not been overlooked. The result of each individual test may be assumed to have a special significance, so that a patient could be grouped according to one test only; that is, he might be "good" on two scores, but only "fair" on the other, and it might be thought justifiable to classify him as "fair" on account of a particular type of respiratory failure The three tests we have investigated yield for the 90 cases a total of 253 tests (in a few instances no result was obtained), and of these only 59 (23 per cent) agree with the clinical classification

It would be difficult to devise tests which should, on physiological grounds, give a better interpretation of the functional capacity of the lungs for gaseous transfer, than that dealing with the amount of ventilation necessary for a given oxygen intake, and that determining the relation of dead space to tidal air. If these are reliable, and the clinical estimate of the patients is reasonably accurate, then we must look elsewhere for the serious lack of agreement between them when individual cases are considered. This may be found in a consideration of the following points, although to turn them to practical advantage would be no easy matter The ultimate demand for oxygen is made by the tissues themselves, and may be satisfied in several ways—for instance, by increased ventilation, by a quicker blood flow, by an increase in the amount of hæmoglobin, or by a greater utilisation of the existing supply. We know that venous blood is normally far from completely reduced; if the tissues reduced it completely, they would materially increase their oxygen supply It is possible therefore that if the capacity of the lungs is impaired, the resulting oxygen deficiency might be made up by the hæmopoietic and cardiovascular systems, so that there might be few clinical grounds for stating that a patient was suffering from respiratory failure The functional tests, applied to the lungs alone, might at the same time indicate serious deficiency. An analagous case is the detection of a valvular lesion of the heart, with few general symptoms. If the tests recorded in this report could have been correlated in some way with cardiac output, hæmoglobin percentage and degree of oxygen saturation of the venous blood, their value might have appeared much greater. Prof. J. Barcroft in a recent book[3] has emphasised this well-known factor of "integration" when adaptation to abnormal conditions becomes necessary; not one, but many modifications of function contribute to the final result, which theoretically might have been attained by one only.

To sum up In this report Dr. Moncrieff gives an impressive account of an excellent and very necessary research, but we feel that the conclusions to be drawn from it are at present negative, and that the practical application of the results as they stand would be injudicious. On the other hand, there is ample reason for believing that the further elaboration of such results in the preliminary investigation stage might vindicate the practical value of some of the methods and render them of even greater significance than the author is inclined to claim for them.

UNION THÉRAPEUTIQUE

As a result of the French Therapeutic Congress of 1933, the Union Thérapeutique came into being under the auspices of the Société Thérapeutique de Paris By statute this is an international association of doctors and biologists specially occupied with questions of treatment, its objects being to establish regular contact between its members, to encourage research and to aid the exchange of ideas, theses, and books. In October of each year will be held a general assembly to study the progress of therapeutics, to discuss methods and coördinate efforts. From time to time congresses of a more general nature will be promoted, open to all doctors and biologists The next congress will be at Berne under the presidency of Prof Emil Bürgi some time in 1936. Original members of the Union number 250 and any others who wish to join should approach the secretary-general, Dr. G. Leven, 24, rue de Téhéran, Paris (8e), when their names will be submitted to the next general assembly The president of the Union is Prof. Maurice Loeper (Paris), and the vice-presidents Prof. Nicola Pende (Genoa), Prof. E. Perrot (Paris), Prof E. Zunz (Brussels), and Dr. E. P. Poulton (London).

CHANGES AT THE DENTAL BOARD

Sir Francis Acland's address at the opening of the twenty-seventh session of the Dental Board of the United Kingdom was occupied almost entirely with welcoming new members—six out of the total of thirteen were joining the Board for the first time—and with recording the services of those who had retired. Of the six new members Prof. R J. Johnstone is the Irish representative, and Prof D. Waterston the Scottish representative of the General Medical Council. Mr. J. M. Vallance, W.S., appointed by the Scottish Department of Health, is in charge of the division of medical services Mr. W. L Edwards, who represents dentists registered under the Act of 1921, is a Gloucester dentist of great experience and a member of the Dental Benefit Council Dr C. F Rilot and Mr. J. A. Woods, direct representatives of qualified dentists practising in England and Wales, both hold high position in the British Dental Association and have dental education at their fingers' ends. Mr. Rilot, as deputy visitor for the G.M.C., has been to every dental school in the course of his work; Mr Woods has examined in dental subjects in four universities Of the retiring members Sir Francis Acland described Mr. W. H. Dolamore's record of work at the Board as unique; he had been a member of four committees since the formation of the Board, and chairman of all of them for several years At the conclusion of his address Sir Francis alluded with pleasure to the increasing recognition of the value of work done in schools by the Board's demonstrators He had heard a complaint that one of these visits had led to an increase of small patients at a school dental clinic so great as to be embarrassing The Board's work was also bringing home to education authorities the importance of having an adequate school dental service The Board sat until Friday to deal with a rather heavy disciplinary programme

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[3] "Features in the Architecture of Physiological Function," [illegible] in THE LANCET, July 14th, 1934, p 89

BARBITURIC ARTHRALGIA AND MYALGIA

The rather vague aches and pains to which the barbiturates can give rise are apparently so common that individual observers can report cases by the half-dozen Yet it is only lately that much notice has been taken of this by-product of therapeutics The recent crop of papers on barbituric arthralgia and myalgia no doubt reflects the familiar fact that as soon as an ailment has been discovered cases are detected right and left In *Presse Médicale* for Oct 3rd (p 1536), Dr P Castin and Dr P Gardien record six new cases After giving details of each, they point out that the pain of which the patients complained was not as a rule associated with physical signs (changes in tendon reflexes, sensory and vasomotor disturbances) In only one case was muscular atrophy observed. Usually the patients referred their pain to a particular joint, and its impaired functions seemed to be due to pain in the muscles round about. Several of the barbiturates were incriminated, gardenal, luminal, rutonal, and prosedal being in turn held responsible for the symptoms Aches may occur during the first days of barbiturate medication, but pain, it seems does not come on for a considerable time The ages of the six patients were within the narrow limits of 43 and [illegible] years—"the age of aches and pains" It might be supposed that patients with a rheumatic history would be peculiarly subject to this condition, but only one of the six patients had such a history The scapular region was the favourite site of the symptoms, the other regions, in the order of frequency of involvement, being the hips, arms, metacarpophalangeal joints, knees, thighs, elbows and legs As a rule the pain was cramp like, with intolerable [illegible] refractory to such well known antirheumatic drugs as aspirin, antipyrin, and sodium salicylate A liniment composed of salicylic acid (10 g), [illegible]-degree alcohol (50 g), and castor oil (100 g) was however, capable of affording some relief As for the pathology of this condition, Castin and Gardien are open minded in their discussion of alternative pharmacological explanations

BEQUEST TO A NON-EXISTENT HOSPITAL

The Middlesex Hospital has won on appeal the case which it lost before Mr Justice Bennett in June last[1] over a bequest inaccurately expressed A Mr Forshaw left property which, subject to a life interest, was to revert unconditionally to "The Middlesex Children's Hospital Middlesex Street, London, W" There was no "Middlesex Children's Hospital," no "Middlesex Street" in the "W" district of London and no hospital in any Middlesex Street in London The Middlesex Hospital Mortimer Street claimed the property There were then three courses open to the court It could either declare that the gift should go to the Middlesex Hospital or it could say that the gift failed (with the result that the property would go to the next of kin as on an intestacy), or it could apply what lawyers called the *cy près* doctrine in other words if the judge found a general intention to benefit a charitable purpose and not to benefit a particular institution, he might make some order as to the disposal of the property in a charitable direction corresponding as nearly as possible to the testator's wish Mr Justice Bennett thought the Middlesex Hospital in Mortimer Street was not clearly enough indicated and he found no general intention to benefit a charitable purpose, so he took the second of the three courses and directed that the property should fall into the residue of the estate The Court of Appeal, taking a commonsense view, held that Mr Forshaw meant to benefit an existing hospital and that it was proper to support the gift for a charitable purpose if possible The Master of the Rolls refused to reject the claim of the Middlesex Hospital merely because Mr Forshaw described it as the Middlesex Children's Hospital He thought it possible that "Middlesex Street" was just an inadvertent slip for Mortimer Street Thus the Middlesex Hospital succeeds in its claim There is legal authority for upholding a gift made to a recipient described by a nickname or an erroneous name proved to have been used by the giver There was evidence that Mr Forshaw took a special interest in the Middlesex Hospital Mr Justice Bennett seemed inclined to disregard this evidence, but laymen will probably think this element in the case was decisive

AURICULAR RATE IN PAROXYSMAL TACHYCARDIA

An interesting electrocardiogram was lately published and discussed by P D Camp and D Scherf[1] It was recorded from a woman of 42 with mitral stenosis, who had paroxysms of auricular tachycardia about once a week, each lasting an hour or less The authors were fortunate in registering, by chance, the onset of an attack The tracing showed normal rhythm to be replaced by repeated auricular extra systoles with a rate of 107 per minute, then without pause there was a sudden transition to an auricular tachycardia with a rate of exactly double, that is, 214 per minute, the ventricle following uniformly except for an occasional blocked beat The interpretation suggested is that impulses arise from an irritable focus in the auricle at the rate of 214 per minute During the period in which auricular waves are seen with a speed of half this—i e, 107, alternate impulses are blocked within the auricle, later, all the impulses succeed in stimulating the auricle, which is driven at the rate of 214 Against the other possibility that there is in reality an auricular rate of 214 throughout is the total absence of any indication of alternate P waves buried in the ventricular complex Neither is it easy to explain the tracing as one of auricular flutter with variable auriculo ventricular block Camp and Scherf appear to favour the view which explains [illegible] auricular flutter and fibrillation as originating in a single irritable focus in the auricle, the [illegible] being the same as in auricular tachycardia, the difference lying in the rate of impulse formation This is the attitude commonly adopted on [illegible] while in this country the view of [illegible] and fibrillation are due to a [illegible] wave is generally held An unusual [illegible] years ago by H Cookson and A E [illegible] is considered by Camp and Scherf [illegible] hypothesis of the mechanism of [illegible] In that case there was an [illegible] auricular wave frequency [illegible] ventricular rate remaining [illegible] the course of the circus wave [illegible] and Clark-Kennedy to be [illegible] the appearances but [illegible] interpret them as [illegible] impulses generated [illegible] arguments, while not convincing as to the mechanism of flutter, seem to provide a reasonable explanation for the unusual behaviour of their own case of auricular tachycardia.

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[1] THE LANCET, 1934 i 1105

[1] Wien Arch f [illegible]

[2] [illegible]

GEORGES DREYER

A GREAT tribute was paid to Georges Dreyer, whose sudden death occurred in Denmark last August when, at the Sir William Dunn School of Pathology on Friday last, Dr. Ainley Walker delivered a public address on Dreyer's scientific work at the University Dr Walker brought forward the reasons why that work showed both remarkable and original directions and promise of permanent value Dreyer's earliest important publication from Oxford was an account of his first method of measuring the agglutination titre of blood-serum This work was published in Denmark under the influence of Madsen, and had escaped general attention in this country Dreyer, with his assistants, arrived by using standardised materials at the conversion of what had previously been a rough qualitative test into a quantitative measure of the exact amount of agglutinative action present Later he proceeded in association with Dr Walker to throw much further light on the source of agglutinins and similar immune products and indeed on the general mechanism of the protective reaction Dr. Walker outlined this work, pointing out that in its course, and in connexion with other questions that came up for consideration, the researchers became aware that valuable conclusions might follow if they were able to ascertain the total quantity of agglutinin present in the circulating blood of immunised animals, and not merely its percentage concentration Dreyer undertook a reinvestigation of blood volume in certain smaller animals by very exact methods and the conclusion was arrived at that the volume of the circulating blood, by means of which heat is distributed throughout the body, and is brought to the surface for regulated discharge, must itself be related numerically to the area of that surface Carefully devised technique was employed for measuring the blood volume of animals—a long series of experiments to this end being carried out by Dreyer and Dr. William Ray The experiments were communicated to the Royal Society, when Dreyer and Ray were able to show in a series of different species of animals that the blood volume is proportional to the body surface throughout any given species, the constants of their formula being determined for the tame and wild rabbit, the hare, the guinea-pig, the wild rat, and the mouse Dr Walker then discussed the controversy which had arisen over the conclusions and detailed the confirmatory work which Dreyer, Ray, and himself had carried out, making mathematical analyses on the observations on blood volume previously published by a number of observers As a result of these further researches Dr Walker held that they had been able to maintain the original conclusion, since which time the application of Dreyer's volume formula has offered satisfactory solutions of analogous problems

Later in his interesting discourse Dr. Walker dwelt on Dreyer's inquiries into how the rapid adaptation to diminish oxygen tension, which some successful climbers exhibit during an ascent is brought about, whereas others develop symptoms of mountain sickness Large sums of money had already been expended in studying this problem in man, but with no convincing results, though many of the observations were made by persons who had themselves just made ascents It seemed not unlikely that their sense perceptions and judgment were temporarily impaired by that very oxygen-lack whose effects they were trying to observe The problems were attacked by Dreyer and Dr Walker who thought that fresh light could be thrown upon them now that a reliable formula for blood volume had been secured They formed the provisional working hypothesis that the immediate adjustment to gradual lowering of the oxygen tension of the air took place by a concentration of the blood—a lessening of its fluid content—so that more hæmoglobin was present per unit volume, and therefore more oxygen could be taken up in its passage through the lungs than when only the normal amount of hæmoglobin was present. In support of this view were the results of a few inquiries made among men accustomed to climbing or flying, and they were told by climbers that during an ascent they experienced a steady and copious excretion of water by the kidneys, while when occasionally this excretion of water failed to set in, they invariably suffered from mountain sickness The well-known pharmacological work carried out by Dreyer and himself, with the intention of accounting for the incongruity of results obtained in a number of animals of different size and weight under experimental dosage, was here referred to in proper detail. It had been held that the right dose was arrived at by calculations in proportion to the animal's weight, but the new investigations showed that instead of relation to weight, that is to say to the blood volume of the individual, the relation to the respective body surface of each animal should be regarded

Dr Walker then gave details of Dreyer's work during the war and the researches undertaken in Oxford, with the help of the Medical Research Council, to produce in bulk and distribute Dreyer's standard agglutinable cultures and agglutinating sera for diagnostic purposes He pointed out that this work on serum diagnosis, which gained for Dreyer wide immediate credit, was of the greatest public service at a time of critical need He considered that Dreyer's researches, centring on the discovery of a reliable formula for the blood volume, though they may not yet have fully penetrated into physiological and pathological teaching, would hereafter come to be regarded as his most enduring contribution to knowledge, and his greatest achievement in biological science.

THE next session of the General Medical Council will open on Tuesday, Nov. 27th, at 2 P.M., when Sir Norman Walker, the President, will take the chair and deliver an address. The Council will sit thereafter from day to day until their business is concluded

ON Thursday, Nov 29th, at 9 P M, Prof G R. Minot, of Harvard, one of this year's Nobel prize winners for medicine and physiology, will lecture on Some Aspects of Anæmia at the house of the Royal Society of Medicine This meeting is open only to Fellows of the Society

ON Thursday, Dec 6th, at 5 P M, Prof. William Wright will deliver the Thomas Vicary lecture of the Royal College of Surgeons of England, his subject being Galen on the Eye On Thursday, Dec 13th, at the same hour, Mr Victor Bonney will deliver the Bradshaw lecture, in which he will speak on the functional derangement of the intestine that follows abdominal operations Students and others not fellows or members of the College will be admitted on presentation of their visiting cards

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXVIII.—PROGNOSIS AFTER INJURIES TO TENDONS

INJURIES to tendons can be divided into two categories (1) subcutaneous or closed injuries to tendons when there is no injury to the skin, and (2) open wounds of tendons. Of subcutaneous ruptures, the only common ones in the upper limb are (*a*) long head of biceps, (*b*) extensor longus pollicis, (*c*) extensor longus digitorum. Partial rupture of the supraspinatus tendon is rare and a few cases are recorded of rupture of the lower end of the biceps tendon. In the lower limb ruptures occur in (*a*) the rectus femoris, (*b*) the infrapatellar tendon, (*c*) tendo Achillis. The adductor longus and adductor brevis may rupture in riders. Cases are reported of rupture of the hamstrings but these are usually muscle injuries and not tendon ruptures. Open wounds of tendons occur most frequently on the palmar aspect of the wrist, in the palm of the hand, and on the flexor or extensor surface of the fingers.

Closed or Subcutaneous Injury

Long head of biceps.—When this tendon has been torn from its attachment to the glenoid operative treatment is usually advised unless there is extensive arthritis of the shoulder-joint or the patient's general condition contra-indicates an operation of this type. After fixation of the long head to the short head or to the humerus in the region of the bicipital groove, the patient will find he has excellent function, there is full movement and a strong arm. Sometimes the belly of the muscle is slightly lower than normal, but this is not associated with any incapacity.

If arthritis of the shoulder joint is present or for other reasons operation is considered inadvisable the short head of the biceps will take all the strain of the upper attachment, for the long head will coil up just above the belly of the muscle and the belly will be lower than normal. Under these circumstances the function will be limited to some extent but the total disability is not great because the brachio-radialis will materially assist in the action normally fulfilled by the biceps. In old standing cases of rupture of the long head, function will not be improved by operation.

If operation is carried out for rupture of the *biceps tendon of insertion to the radius* complete range of movement at the elbow joint is to be expected with full power of the arm.

Extensor longus pollicis.—Rupture of this tendon occurs in the radial groove either spontaneously or as a sequel to fracture of the lower end of the radius—in the latter case some weeks after the bony injury. If no operation is carried out the patient will not be able to extend the terminal phalanx of the thumb, as retraction of the proximal portion of the tendon is inevitable. The operation consists in suture of the ruptured tendon directly or by insertion of a tendon graft. Perfect or good restoration of function can be expected in the majority of cases provided that operation is carried out within a few weeks of the injury, that the thumb is kept fully extended for at least three weeks after the operation and that the repaired tendon is replaced in the groove so as to preserve the oblique course.

Delayed operation does not produce such satisfactory results and an elongated tendon subsequent to operation is not followed by perfect function. In the cases associated with fracture, good function cannot be expected in the thumb if the fracture was not set satisfactorily.

Extensor longus digitorum.—The insertion of this tendon into the distal phalanx of any finger may be torn away with or without a small chip of bone. The condition is usually treated by placing the finger so that the terminal phalanx is hyperextended with or without flexion of the first interphalangeal joint. Provided that the finger is kept in one of these two positions for four weeks, good function—that is, normal extension and no stiffness of the end of the finger—is to be expected. In a number of cases the last joint cannot be extended fully, but this implies but little disability. Operative treatment at this stage is not followed by any better result. If the case is seen some weeks after the injury the question frequently arises as to whether better extension can be obtained by open operation, that is, by fixing the tendon to the terminal phalanx. On the whole, as useful a finger is obtained by keeping the finger quiet on a splint with the last joint extended as by open operation, even if the splinting is not commenced for three or four weeks after the injury.

The condition is more complicated if the terminal phalanx slips forward at the same time as the tendon is torn. If the reduction of the dislocation under an anæsthetic is perfect, the end-result is as satisfactory as in an uncomplicated case. Imperfect reduction, however, will be followed by painful stiffness of the end of the finger—a serious condition—but one which does not result from the tendon injury alone.

Rectus femoris.—This tendon is torn from the upper lip and anterior surface of the patella usually in elderly men. Age seldom contra-indicates operation, for the patients are usually of vigorous type. If the tendon is fixed back in position by operation, complete restoration of function is to be expected. If no operation is carried out, weakness of extension of the knee is inevitable, as this will have to be carried out by the lateral expansion of the quadriceps. This is at best not a very efficient method of extension of the knee, and in some cases the rupture of the rectus may extend laterally and so diminish the power of the vasti muscles.

Ligamentum patellæ.—The prognosis after a rupture of this tendon is comparable with that of rectus femoris. If operation is carried out a good result is to be expected, but without operation full extension of the knee will not be possible. Operative treatment for rupture of the ligamentum patellæ some weeks after the injury is not followed by full range of extension. Permanent elongation is almost invariable even if strips of fascia lata are used to bring the patella nearer to the tubercle of the tibia.

Tendo Achillis.—Recent ruptures of the tendo Achillis are followed by satisfactory results if operative repair is carried out early. If end-to-end suture is not possible strips of fascia lata are used to reinforce the torn ragged bundles and a strong efficient tendon is produced. Patients find that the leg is weak and plantar flexion uncomfortable often for six months but after that time active games and driving a car are not interfered with. H. Platt quotes the case of a man whose tendo Achillis he sutured nine weeks after an injury who subsequently climbed the Matterhorn.

In old neglected cases the leg is weak and there is retraction of the calf Operative treatment definitely improves the condition, particularly if tendinous or fascial material is used to fill in the gap. Perfect function may be achieved but does not necessarily follow late operative treatment. If operative treatment is contra-indicated it is the custom to follow the treatment John Hunter carried out on himself by keeping the foot in equinus Although this will approximate the torn fibres, the gap is inevitable in cases of complete rupture Full dorsiflexion and full power of plantar flexion will not be regained

Ruptures of the adductors.—This injury does not lead to permanent disability. The fact of ossification occurring in the tendon does not necessarily produce any weakness in the adductor muscles.

Open Wounds of Tendons

Treatment of the complete division of a tendon by splinting alone will be followed by complete loss of the movement normally carried out by the muscle to which that tendon belongs Contractures may develop When operative treatment is carried out, better results follow immediate suture, if this is performed under perfect surgical surroundings, than suture which is delayed or performed under faulty operative technique Taken as a whole, open wounds of the extensor tendons of the fingers do well after suture, whereas wounds of the flexor tendons are followed by limitation of movement and often by stiff fingers

In order to obtain good results it is essential to study the causes of failure after tendon sutures. The more common causes of failure are: (1) the suture fails and continuity of the tendon is not re-established; (2) anatomical continuity is re-established by suture but function is not obtained owing to adhesions.

Failure of suture may result from suppuration in about 15 per cent of cases The mechanical causes of separation of the suture-line depend on the material used for suture, the mobilisation of the tendon, and on muscular retraction. Adhesions of the tendon around the line of suture may be disastrous; these are more likely to occur where the tendon passes through a sheath which cannot distend, such as on the flexor surface of the finger, whereas after suture at the wrist, adhesions may not affect the ultimate efficiency of the suture Good function is only obtainable if adhesions are avoided by doing a minimum of damage at the time of operation, avoiding infection, and limiting the length of time that the part is immobilised. Failure of tendon suture is likely to be followed by stiffness of a finger and limitation of movement

The prognosis of open wounds of the flexor and extensor tendons has been considered by Bloch and Bonnet (Jour. de Chir., 1929, xxxiv, 456) and their statistics are of some interest

Suture of extensor tendons	Cases	Results	
At level of carpus	17	Very good	15
At level of metacarpus	110	Good	104
Flexor tendons			
In palm	61	Satisfactory	32
Flexor profundus—			
In finger	44	Bad	37
In thumb	24	Good	19

ST. J D BUXTON, F R C S,
Surgeon and Orthopædic Surgeon to King's College Hospital.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Comdr A J Tozer to *Pembroke* for R.N.B

Surg. Lt F. M. Duthie to *Victory* for R N B., and A. K. Stevenson to *Exmouth.*

ROYAL NAVAL VOLUNTEER RESERVE

Proby. Surg Sub-Lt J Scott to be Surg. Lt.

M. D Edwards entered as Proby. Surg. Sub-Lt. and attached to list 2 of the Ulster Div

S E Cooke and R P. Phillips entered as Proby Surg. Sub-Lts.

ROYAL ARMY MEDICAL CORPS

Maj. R. I. Sullivan, M C, retires on ret pay.

Short Serv Commns—The undermentioned Lts. (on prob) are secd. under the provisions of Art. 213, Royal Warrant for Pay and Promotion, 1931 :—

J M. Carnow, R H Wheeler, J J. Sullivan, I U Young, J J C Ramsbury, J O'Connell, E J. Pryn, R Phillipson, and P L E Wood

REGULAR ARMY RESERVE OF OFFICERS

The undermentioned having attained the age limit of liability to recall, cease to belong to the Res of Off :—

Col. N J C Rutherford, D.S.O. (late R A M C), Lt-Col M O Wilson, and Lt-Col A S. Littlejohns, D S O

TERRITORIAL ARMY

Capt C L Day, R A M C., to be Divl Adjt, 44th (Home Counties) Div, vice Capt J. N Atkinson, R A M C., vacated.

Gerald Green (late Cadet, Queen's Univ. Belfast Contgt., Sen. Div, O T.C) to be Lt.

Supernumerary for service with the O T C—Capt (local Maj) G. P. Crowden to be Maj.

TERRITORIAL ARMY RESERVE OF OFFICERS

Capt. R Woodside, from Active List, to be Capt

ROYAL AIR FORCE

Wing Comdr H A Hewat to R A F. Depot, Uxbridge, for duty as Senior Medical Officer and Commanding Officer, R A F Officers' Hospital

Squadron Leader A E Barr-Sim to Central Medical Establishment for duty as Medical Officer.

COLONIAL MEDICAL SERVICE

The following appointments have been made Dr J. W. Field becomes Malaria Research Officer I., Institute for Medical Research, Federated Malay States, and Dr R T. B Green, Bacteriologist to the Institute, Dr. F V Jacques becomes Deputy State Medical and Health Officer, Perak, Dr R W. D. Maxwell, District Medical Officer, Fiji, Dr G L Milburn, Senior Medical Officer, St Kitts-Nevis; Dr G I. Shaw, Medical Officer, Hong Kong, and Dr A W H. Smith, Medical Superintendent, Lunatic Asylum, St Ann's, Trinidad.

MEDICAL PROBLEMS OF INDUSTRY—The Ross Institute of Tropical Hygiene is arranging for a two-day conference next July at the London School of Hygiene and Tropical Medicine in order that medical officers in industry on leave from the tropics may meet their colleagues and discuss their problems together The main subject for discussion will be the prevention of disease—e g, control of malaria and epidemic diseases in the tropics, water supplies, sewage and refuse disposal, housing, the keeping of records, and hygiene generally. Medical officers practising on plantations, mines, railways, hydro-electric and construction schemes, and other development companies are invited to apply to the organising secretary, Ross Institute, Keppel-street, London, W C 1 It is intended to make this conference an annual one

SPECIAL ARTICLES

DIPHTHERIA IMMUNISATION

A REVIEW OF EIGHT YEARS' WORK IN BIRMINGHAM

By MATTHEW BURN, M C, M M, F R C P Edin, D P H, D T M & H
DEPUTY MEDICAL OFFICER OF HEALTH BIRMINGHAM, AND
VERA FELLOWES, M B Birm
ASSISTANT MEDICAL OFFICER FOR IMMUNISATION AND MATERNITY AND CHILD WELFARE BIRMINGHAM

BEFORE the establishment of active immunisation Birmingham had suffered severely from diphtheria for many years, the disease being virulent in type and high in incidence and mortality The greatest number of cases had always occurred in children between five and seven years of age and a considerable number of pre school children were undoubtedly infected by older brothers and sisters, while the majority of adults were close relations of the children and followed them to hospital

Table I gives the cases and deaths from 1901–33, and Table II the figures from 1920 to 1933 arranged in age groups The notified figures have been corrected after revision of diagnosis There has been a great increase in the population and in the area of the city since the beginning of the century

Population	1900	519,610
„	1925	925,766
„	1933	1,023,500*

*With approximately 250 000 children under 15 years of age

TABLE I—*Diphtheria Cases and Deaths from* 1901 *to* 1933

Year	Per 1000 of the population		Year	Per 1000 of the population	
	Case-rate	Death rate		Case rate	Death rate
[illegible]	1·04	0·16	1918	1·02	0·18
[illegible]	1·14	0·24	1919	1·05	0·14
[illegible]	1·52	0·23	1920	1·93	0·22
[illegible]	1·15	0·21	1921	1·80	0·13
[illegible]	1·23	0·17	1922	1·39	0·10
[illegible]	1·16	0·17	1923	1·65	0·15
[illegible]	1·81	0·20	1924	1·97	0·10
[illegible]	1·49	0·20	1925	2·00	0·10
[illegible]	1·38	0·20	1926	1·88	0·12
[illegible]	1·28	0·13	1927	1·60	0·06
[illegible]	1·35	0·13	1928	1·59	0·07
[illegible]	0·95	0·12	1929	1·61	0·09
[illegible]	1·13	0·19	1930	1·73	0·09
[illegible]	1·81	0·10	1931	1·10	0·06
[illegible]	1·21	0·15	1932	0·61	0·03
[illegible]	1·07	0·13	1933	0·41	0·03
[illegible]	0·86	0·13			

A Résumé of Activities

The first step towards preventive work was taken in 1922 when Dr E H R Harries, then medical superintendent of the city hospitals for infectious diseases, commenced the differentiation of the nursing staff by means of the Schick test In 1923 active immunisation of the nursing staff was started and [illegible] this treatment was extended to the domestic staff (Details of this work and its effect on the incidence of diphtheria among the staff were published by Dr Harries in 1930 [1])

In December, 1924, the public health committee approved a scheme prepared by Dr Harries for the active immunisation of young children at welfare centres, omitting a preliminary Schick test in children under five years of age, a confirmatory Schick test being carried out about nine months after inoculation The scheme was not actually put into effect until 1926, although immunisation was carried out in 1925 in three residential institutions, where diphtheria had been prevalent Early in 1926 Schick testing and active immunisation were offered to relatives and neighbours of children who were in the city hospitals suffering from diphtheria This was intended as a feeler into the attitude of the public towards the scheme, and was received with such enthusiasm that, while it was realised that at the hospital one was dealing with parents likely to be biased in favour of prevention, there was reason to think that a central clinic would be well attended

TABLE II—*Cases of Diphtheria (C) and Deaths (D) in Age groups from* 1920 *to* 1933

Year	0–5 years		5–10 years		10–15 years		15–20 years		Over 20 years	
	C	D	C	D	C	D	C	D	C	D
1920	389	99	710	70	310	16	131	2	215	5
1921	339	64	633	53	331	11	116	0	233	2
1922	327	34	479	43	232	6	93	1	164	6
1923	402	68	526	42	288	18	125	5	196	6
1924	505	48	623	40	343	11	174	1	242	0
1925	548	54	617	42	300	7	131	0	234	2
1926	461	47	677	52	274	12	141	1	248	4
1927	376	20	501	30	237	7	107	0	262	4
1928	346	20	640	32	257	8	110	1	199	5
1929	402	36	699	34	229	7	116	5	165	4
1930	423	38	660	29	204	6	101	1	223	14
1931	320	22	430	27	179	9	80	1	147	3
1932	179	15	219	15	87	2	47	1	88	2
1933	110	14	145	12	84	3	30	2	45	2

There had been severe outbreaks of diphtheria in two districts during the winter of 1925–26, 11 deaths having occurred among the children attending one small school These districts were systematically visited by sanitary inspectors and health visitors, explanatory leaflets and appointment cards being left

In April, 1926, a weekly clinic was opened at the public health department and the clinic at Little Bromwich Hospital thrown open to residents in the neighbourhood During the first year (April to December, 1926) 426 children attended the central clinic for three inoculations Between 35 per cent and 40 per cent were under five years of age Testing and immunisation were carried out in three other institutions, and new admissions to the institutions visited in 1925 were tested as soon as possible after admission Preliminary and confirmatory Schick testing was carried out on all children in institutions, and children attending the central clinic were sent for for confirmatory Schick tests nine months after inoculation A considerable number failed to attend for this test, and whenever possible the parents were visited and urged to bring their children

In 1927 over 1000 children attended the clinic for the complete course of injections, but only 55 per cent attended for the confirmatory Schick test About 20 per cent of the children were under five years of age, and [illegible] per cent between five and ten years The number failing to complete the course was 201, and 173 gave primary Schick negative reactions Of the negative reactors less than 1 per cent were between five and ten years of age

Owing to the great increase in attendance and the large number of Schick positive reactors, immunisation without preliminary Schick testing was extended to the age of ten years One session a week [illegible] two of them in the evening for the convenience of school-children By the end of the year the scheme was well established, but the number of children immunised was too small to make any impression on the general incidence of diphtheria, and many mothers found the difficulty and expense of bringing several children to the clinic insuperable It was felt that if treatment could be carried out in schools it would be much simplified and greater numbers of children could be dealt with in a session.

With the cooperation of Dr G A. Auden, the chief school medical officer, and the headmaster, the first school was visited in November, 1927, a little Roman Catholic school in an area where diphtheria had been persistently prevalent and severe. At this time the work in the schools was dependent on the goodwill of the head teachers; it meant a great deal of extra work for them at play times and after school hours

In 1928 two clinics a week were held at the public health department, institutions already visited were kept up to date, and immunisation started in other residential schools. Eight elementary schools—14 departments—were visited, 1387 children were inoculated, and 664 gave primary Schick-negative reactions It was estimated that by the end of 1928 there were about 8000 persons—mostly children—who had given primary Schick-negative reactions (approximately 2000) or received a full course of injections.

In 1928 the clinic at Little Bromwich Hospital was closed because the district had become more populous and transport easier

In 1929 special immunisation clinics were held at three of the main welfare centres of the city, in addition to a weekly session at the public health department Talks were given and demonstrations held at the centres and house-to-house visiting done by the health visitors A total of 631 children were inoculated at the three centres, a large proportion of these children being of school age Ten elementary schools were visited, the acceptance-rates varying from 10 per cent to 80 per cent.

Nearly 4000 children were inoculated in the year, bringing the total of inoculated to approximately 10,000

Up to the end of 1929 the work had been performed by a general practitioner who had had special training and experience at the fever hospital, assisted when necessary by one of the medical officers from the hospital She had not time for the increasing amount of immunisation work, and resigned. In March, 1930, one of the writers who had had nearly three years' experience as assistant medical officer at the city hospitals, took up duties as assistant medical officer for immunisation, spending five sessions a week on this work and the remaining sessions on maternity and child welfare work An important step towards increasing the number of immunised children was now taken in obtaining the permission of the Board of Education to inoculate school-children on school premises during school hours—immunisation being accepted as part of school medical treatment

In May, 1930, a fatal case of diphtheria occurred at an institution in which Schick testing and inoculation had been carried out since 1926 Investigations were made there and at other institutions, and our findings were published in 1931[2] Following these investigations, it was decided to abandon the Schick test for these reasons :—

1 We felt that we could not take the responsibility of assuring parents that a Schick-negative reaction indicated a complete and permanent immunity to diphtheria

2 We were only performing a primary Schick test in children over ten years of age, and the majority of these gave positive reactions, thus adding to the number of visits to schools

3 It had been found impossible to do confirmatory Schick testing at schools and local welfare centres, and less than half the children attending the central clinic returned for confirmatory Schick tests although a post card was sent making an appointment for every child.

4 The omission of Schick testing would save a great deal of time and enable more children to be immunised in a given time.

The proportion of children immunised up to 1931 was too small to reduce the general rate of diphtheria, and unless numbers were materially increased never would do so. With 216 elementary schools in the city, it would take 18 years to visit each of them once

During 1930 the work was carried on as before, a total of 4168 children being immunised. Fourteen schools were visited and clinics held at eight welfare centres, since it was more convenient for mothers to take young children to local centres than to make the journey into the city Arrangements were made to supply toxoid-antitoxin free of charge to medical practitioners who desired to carry out immunisation in their practices

In April, 1931, Schick testing was abandoned Seven thousand children were inoculated in the year, 6000 of them in schools, 39 schools being visited for the purpose It was decided to confine school immunisation to infant and junior departments, the older children being treated at the central clinic or local centres

In 1932 11,566 children were immunised, 86 schools and 5 centres were visited.

During 1933 a further 12,709 children were completely immunised, 121 schools being visited in the year A second medical officer gave two sessions a week and a second health visitor five sessions a week to the work for eight months of the year This was only a temporary arrangement and has been discontinued. By the end of the year all the junior and infant schools and a number of the senior schools had been visited once, and 65 schools had been visited twice Work was carried out at 14 welfare centres and institutional work kept up to date All these figures refer to completed cases only

The Present Scheme

Staff—One medical officer holds five sessions a week and one health visitor is employed whole-time. Summer holidays are taken during the school holidays, and no immunisation is carried out then except for one session a week at the public health department

Material used—Toxin-antitoxin was used in 1925, 1926, and 1927, and toxoid-antitoxin mixture subsequently in 1 c cm. doses at fortnightly intervals

Schools—Each school is visited by the health visitor about a month before the work is to be carried out She explains the procedure, notes the number of leaflets needed, and fixes a date for the first visit Leaflets giving the reasons for the work and explaining the simplicity of the procedure, with a space for signature, are distributed to the children, and record cards with a space for the name, age, and address are made out at the schools—the older children writing their own Three visits are made at fortnightly intervals for the inoculations, and a fourth visit is paid in order that children who have been absent shall have another opportunity of continuing the treatment After the first inoculation the health visitor visits and investigates any complaints It will now be possible to revisit all the junior and infant schools at intervals of about 18 months

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[2] Med Officer, July 11th, 1931, p 15

Welfare centres—There are 30 welfare centres in Birmingham Propaganda is carried out at the centres, and when house visiting Parents are urged to have their children immunised before they go to school Forms are left for signature and are returned to the centre When sufficient names have been collected (50 to 150 according to the district) appointment cards are sent and the centre is visited four times for treatment If a parent fails to attend on either occasion a health visitor goes to ascertain the reason for default and to urge completion of the course and a post card is sent to each defaulter making an appointment for the fourth visit of the medical officer

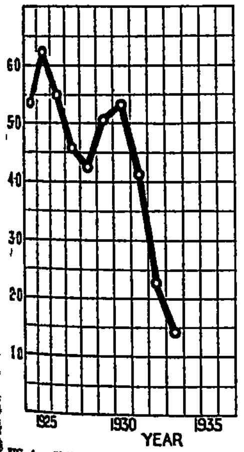

FIG 1—Children under 5 years of age Diphtheria case rate per 1000 of population

A special immunisation clinic is held at each centre in turn The intervals vary with the district In the large housing estates one or more clinics may be held every year In districts with fewer children, one in every two years is often enough with the present rate of acceptance

Central clinic—One clinic a week is held at the public health department in the centre of the city from 4 P M to 5 30 P M Children of any age from eight months can be immunised there, but the number of children attending for three doses is now comparatively small—only 139 in 1933—because it is much less trouble for the parents to have the children immunised at school or local welfare centres The chief value of this clinic is for finishing cases not completed at schools or centres In every unfinished case a post card is sent making an appointment at the central clinic Attendances vary from 30 to 100

Institutions—Ten institutions are visited regularly and immunisation kept up to date When only two or three children are admitted at a time they are brought to the central clinic

General practitioners—1 c cm doses of toxoid-antitoxin (T A M) are supplied free of charge to general practitioners on request, the doses being sent separately at 14 days' intervals The use made of these facilities by general practitioners is as follows —

Year	Children immunised	Year	Children immunised
1930	28	1932	29
1931	61	1933	90

Record keeping and filing—All the record keeping and filing is done by the health visitor Cards making appointments for welfare centres are sent out by the maternity and child welfare office staff, and T A M for general practitioners by the general office

Propaganda—No propaganda is used in the schools, but health visitors and doctors give talks at welfare centres Since January, 1934, a leaflet has been sent to parents when their child attains eight months of age, giving particulars of the treatment and stating how it may be obtained Up to date the response has been encouraging, particularly with the more well to do parents who are applying to their family doctors These leaflets are sent out from the general office

Comments

(1) The problem which concerned one of us on taking administrative control of the work was as follows It was realised that it was necessary to have some 30,000 to 50,000 protected children before any material reduction in diphtheria could be expected The approximate school population of the city was 150,000, and some 16,000 children were born annually, yet an insignificant number of children

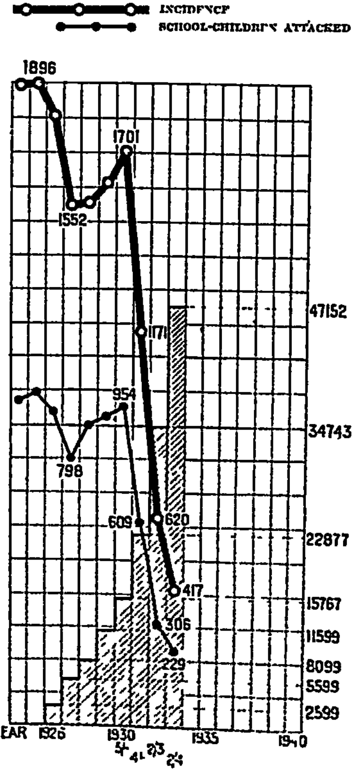

FIG 2—Incidence of diphtheria in Birmingham and among Birmingham school-children The hatched columns and the figures on the right of the chart show the numbers of school children immunised The cost of immunisation per child during the past four years is shown below (shillings and pence)

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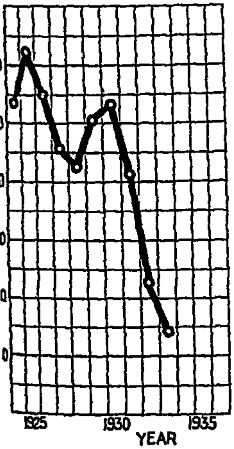

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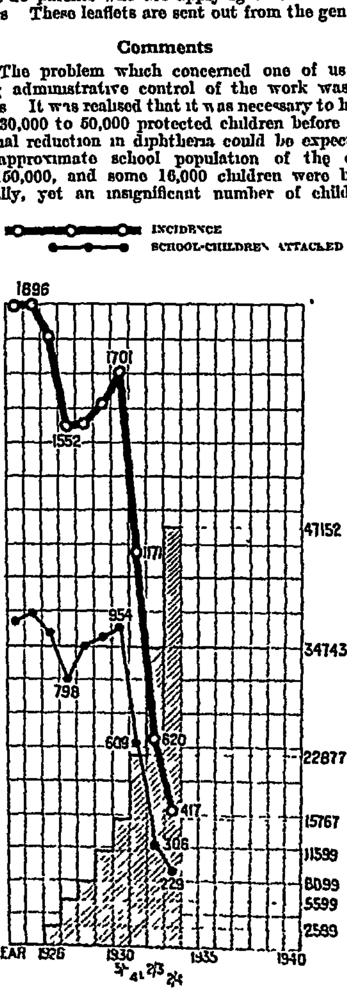

FIG 2—Incidence of diphtheria in Birmingham and among Birmingham school-children The hatched columns and the figures on the right of the chart show the numbers of actual children immunised The cost of immunisation per child during the past four years is shown below

were being immunised each year Owing, therefore, to (*a*) the fact that two children who had given primary Schick-negative reactions later died from diphtheria; (*b*) the unfavourable deductions drawn after investigating these cases, and (*c*) the extreme difficulty or impossibility of obtaining 60 per cent. immunity in the population "at risk" with present procedure, the decision was reached that Schick testing, either preliminary or post, should be abandoned, since when the figures for immunisation have increased from 4000 per annum to 11,500, though the actual time devoted to the work and the staff remain the same.

It is estimated that approximately 50,000 persons have been immunised through the public health department from 1925 to the end of 1933. The majority of these are still under 15 years of age.

(2) The average number of cases of diphtheria occurring annually in Birmingham from 1901 to 1930 was 1280. In 1933 the figure was 417, or 863 cases less. While recognising the periodicity of the disease, we did not feel that the phenomenally low records of 1932 and 1933 could be accounted for entirely on that basis and believed that immunisation had played a considerable part in the decrease We had not enough protected children to influence epidemic figures to any great extent, but believed that any rise would be confined to the uninoculated population (Figs 1 and 2)

Like other big towns Birmingham has experienced not only a rise in incidence, but a marked increase in virulence in 1934 During the first half of 1933 there were 174 cases with 11 deaths, in the first half-year of 1934 there were 400 cases with 31 deaths All these cases occurred in uninoculated individuals; in fact there was no case in an inoculated person this year up to August 31st *

(3) *Costs*—Fig 2 shows that with the revised procedure of 1931 the costs fell from 5*s* per fully immunised child in 1930 to 2*s*. 4*d* in 1933. The cost of material supplied to general practitioners is 5*s* per child The *total* costs for the immunisation of 13,000 children in 1933 was £1562. This figure is an inclusive one, and embraces all money spent on the scheme, such as salaries, locums, material, furniture, and stationery Readers themselves can assess the value of the work in terms of saving of life, health, disturbance of families on diphtheria occurring in the household In actual terms of money there can be set off against the expenditure of £1562 the saving to the city in the great reduction in the number of cases which have occurred since immunisation had reached a point allowing it to have an effect upon the incidence An average cost to the city for the treatment of one diphtheria case is approximately £25, which indicates a saving of *£21,575* The cost of antitoxin for the treatment of diphtheria at the hospital shows a corresponding decrease —

1929	£1659	1932	£623
1930	2046	1933	578
1931	1380		

Apart from this saving of approximately £22,000 for the year 1933, an important effect has been the release of wards, which would otherwise have accommodated diphtheria cases, for the treatment of measles, whooping-cough, &c Previous to 1931, it had not been found possible to accommodate in any degree these latter cases in the fever hospital owing to lack of beds

(4) *Diphtheria after inoculation*—Parents are told that while three injections will usually give a complete and lasting immunity, diphtheria does occur occasionally in an inoculated child, and are warned not to neglect throat ailments They are also told that the protection takes some months to develop. From 1925 until the present time there have been 14 cases of clinical diphtheria in children who have received three injections of T.A M more than six months previously. Details are given in Table III.

TABLE III.—*Cases of Diphtheria in Immunised Children*

Year of attack	Time elapsed since immun	Age at time of immun	Confirmatory Schick reaction.
1925	—	—	—
1926	—	—	—
1927	6 months	5 years	—
1928	9 ,,	—	—
1929	1½ years	4 years	—
1930	3½ ,,	9 months	Negative, Nov, 1929 Positive, at time of attack
1931	7 months	5 years	—
	8 ,,	13 ,,	—
	9 ,,	11 ,,	—
	7 ,,	7 ,,	—
1932	8 ,,	8 ,,	—
	7 ,,	7 ,,	—
	2 years	10 ,,	—
1933	2½ ,,	8 ,,	—
	1 year	4 ,,	—
	6 years	4 ,,	Negative, nine months after inoculation

immun =immunisation

It will be noted that two of these children had given a negative Schick reaction at the confirmatory test In addition, one boy, who gave a primary Schick-negative reaction in October, 1929, when 12¾ years of age, developed diphtheria in May, 1933 He then gave a markedly positive reaction With one exception—a fairly severe attack—all these have been mild cases Occasionally diphtheria occurs within a few weeks of treatment or in children who have not received a full course of injections, but we do not consider these to be failures, since the conditions necessary for protection have not been fulfilled.

(5) *Reactions*—The number of reactions is extremely small, the rate for 1931 being 1·7 per cent These showed redness or stiffness at the site of injection, which lasted from 12 to 36 hours, with usually little or no constitutional disturbance. For 1932–33 this reaction-rate had been further reduced to 0 7 per cent—i e, in reference to 1932 84 children developed a reaction out of a total of 12,000 children immunised This reduction is probably due to the fact that the younger children are now predominating

(6) *Future of the work*—Now that the main part of the school work is finished the numbers will decrease, since we shall be dealing almost entirely with new admissions and visiting the schools at frequent intervals To keep up the re-visits, several schools will have to be visited in one session, so that the time spent will be much the same We are making greater efforts to obtain a higher rate of immunisation among pre-school children, and this work is always slower than the procedure in schools

We estimate that it will be possible to continue to immunise about 8000 children a year (6000 school children and 2000 pre-school children) if we obtain these acceptances—i e, approximately half the number of births

Conclusions

(1) Active immunisation against diphtheria has given excellent results in a large industrial town

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* Since this article was written two further cases of diphtheria have occurred in inoculated children (1) Inoculated February, 1933 (6 years old); developed severe diphtheria in October, 1934 (2) Inoculated March, 1932 (9 years old), developed mild diphtheria in November, 1934

(2) The reactions and the occurrence of diphtheria in the inoculated are negligible—e g , 14 cases of diphtheria have occurred in 58,000 immunised children up to date (3) The cost, as opposed to that of treating diphtheria, is extremely small

CANCER RESEARCH

The Imperial Cancer Research Fund, which works under the auspices of the Royal Colleges of Physicians of London and Surgeons of England, was founded in 1902 as a result of a public appeal It was designed as a research centre to be entirely independent of hospitals or medical schools, with its own laboratory and a permanent staff of scientific investigators engaged solely in research into the causes, prevention, and cure of cancer The Fund receives no grants from outside sources, but during the 32 years of its existence careful administration and generous public support have made it possible to build up capital reserves which have enabled it to maintain its original independent character, while its scientific workers coöperate closely with others engaged in cancer research at home and abroad Sir Holburt Waring, honorary treasurer of the Fund, recalls these facts about its origin and purpose in his report for the year 1933–34, in view of some confusion which has arisen The scientific staff number 7 with 2 voluntary assistants, Mr E S Horning, D Sc , Beit Memorial Research Fellow, and Dr E Vásquez López of Madrid, and 17 technicians The total expenditure of £15,064 involved a deficit of £52 over income, the first for 12 years This is due mainly to the diminution of legacies, donations and subscriptions having risen by nearly £500

The secretary announces in the annual report that the Fund has joined the Union Internationale Contre le Cancer The grant of £250 to assist Dr A T Todd, of Bristol, in his investigations on the colloid therapy of cancer has been renewed for a further year

The Work Accomplished

The director, Dr J A Murray, F R S , reports that the preparation of the eleventh Scientific Report and its supplement, now issued,[1] has occupied the scientific staff for a great part of the year The papers included in it deal with the filtrable tumours of the fowl the relation of diet to carcinogenesis, the study of the inorganic constituents of normal and malignant cells by micro incineration, the mode of action of radium and cytological studies of normal and cancer cells in tissue culture The volume is enriched by 58 beautiful plates of which 7 are coloured, and by many vivid pictorial charts and diagrams

The histological and pathological study by Dr L Foulds of six filtrable fowl tumours emphasises their distinctive permanent differences from each other, and the identity of their biology with that of the mammalian malignant tumours A detailed historical summary of the literature of this branch of cancer research by Dr Foulds is issued as a supplement to the scientific report It presents in clear perspective what has been done, and should prove of value, both to those contemplating or already engaged in, work with these neoplasms, and to those interested in the theoretical discussions of their relations to other new growths and the cancer problem as a whole

The first of two papers by Mr A F Watson, D Sc , on the influence on tar carcinogenesis of an addition of fresh liver to the diet is reprinted from the *American Journal of Cancer*, and the results of further experiments are given in the second paper The increased and accelerated carcinogenic response of tar treated mice when their diet is supplemented continuously with fresh liver is confirmed and new features are brought to light The factor responsible has not been more closely identified, but a preliminary experiment with desiccated hog stomach (which gave no increase) suggests that it is not identical with the hæmopoietic substance responsible for the therapeutic action of fresh liver in pernicious anæmia

The two papers on micro incineration by Dr Horning describe the distribution of the inorganic constituents in the cells of normal skin and in tar carcinoma, and the changes in a transplantable mammary carcinoma after radium radiation

Five papers on the action of radium, by Mr H G Crabtree and Dr W Cramer occupy nearly half the report , their purport is discussed on another page Commenting on the application of these observations to the radio therapy of cancer in man, Dr Murray points out that none of the methods at present available is specific in its action, and that radiotherapy shares with surgery the further disadvantage of localised effectiveness We are still far from such knowledge of the nature of the cancerous change and the way in which the altered cell mechanisms produce its manifestations as would indicate the lines of a successful specific treatment It is undesirable that the improvement of the available methods should await the solution of the more academic questions involved and the fact that fundamental researches and the study of more immediate practical problems can usefully be combined is exemplified in this report

The report concludes with two papers by Mr. R J Ludford, D Sc The first of these is a fully illustrated contribution to the difficult problem of the identification of the cells which migrate from explants of tumours in tissue culture The appearances of the parenchyma cells, which help to distinguish them from the associated macrophages and fibroblasts, are shown in dark ground photomicrographs of the living cells, and the confirmatory evidence from fixed and stained preparations is discussed. The second paper describes a new method of staining fatty substances in living cultures with dyes which are insoluble in water

Characteristics of Transplantable Tumour Strains

The tradition of international collaboration in respect of distribution of material set up by C O Jensen early in this century has been maintained. During the year the director has supplied material to 28 workers, and has received material from 19 workers, in laboratories in Holland, Belgium, France, Sweden, Spain, and Hungary, as well as in the British Isles He mentions especially the value of the cancerous strain of mice bred by Madame Dobrovolskaïa Zavadskaïa at the Institut du Radium, Paris, which is now well established here and produces a high proportion of spontaneous mammary cancers Many of the Fund's transplantable tumour strains are in use all over the world and furnish a [illegible] standard of reference In order to promote a wider and more intelligent use of these strains, their principal characters are set out in the director's report in tabular form

Sixteen mouse tumour strains are included in the Table, four rat strains one cavy and one rabbit [illegible] filtrable fowl tumours For the latter are recorded the histology, the percentage of [illegible] and the duration of life of the bird in weeks For each of the mammalian strains the [illegible] histology, the average [illegible] from 30 to 100 per cent [illegible] as time to reach [illegible] 1 to 26 weeks) [illegible] strains on the [illegible] either with the same [illegible] strain—notably, [illegible] are regarded as of [illegible] are [illegible] characters are intimately bound up with the occurrence of spontaneous regression and the behaviour of the tumours to changed environment and other conditions of growth Some progressively growing tumours set up resistance of varying degree to which they themselves are insensitive, but which can be detected by the reinoculation of tumour-bearing animals with another strain Attention is drawn to the fact that neglect of the appropriate controls has led to disappointment in the past when therapeutic measures have been transferred to man

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[1] London Messrs Taylor and Francis 1934, pp 177 and supplement, pp 41, 30s

Dr. Murray's plea for the publication of similar tables showing the significant characters of tumour strains maintained by other institutes, for purposes of comparison, will be generally endorsed.

MEDICINE AND THE LAW

Manipulative Surgeons and the Medical Act

LAST week two more cases raised the vexed question of unregistered persons "wilfully and falsely" taking the name or title of physician or surgeon or general practitioner, thereby exposing themselves to a fine under Section 40 of the Medical Act. At Marylebone police-court Mr. James McGuigan was fined £5 under the section Fortunately no harm had been done to the patients, said the magistrate, but it was "an excessively dangerous thing for a man to hold himself out as a doctor if he is not one." The defendant, stated to have been formerly a boiler-maker in a shipyard, was said to have taken apartments in Gloucester-place and to have described himself as "Dr McGuigan, manipulative surgeon." A lady living in the same house said she had called him in when she was ill because she thought he was a member of the medical profession It was stated that, in making some complaint to the police about anonymous messages on the telephone, he had called himself "Dr. McGuigan"; but this he denied His own evidence was that he had been practising as a manipulative surgeon and masseur for 20 years and had been supported by many registered medical practitioners in London. He told the magistrate that there was no qualification for manipulative surgery, it was just a method of treatment. In the second case last week the Paignton magistrates dismissed summonses under Section 40 against Captain Horace Barrow, described as a bone-setter, who had used the title of "manipulative surgeon" after his name on the gate-post of his house and on his motor-car When invited by the Medical Defence Union to justify or discontinue the use of these words, he replied that he was not using the title of "surgeon" and would not give up the description on his plate until it was proved that he was not a "manipulative surgeon" The prosecution having proved the use of the words and the fact of non-registration, Mr. Norman Birkett, K C, for the defendant, objected that it was still not proved that Captain Barrow had used the description wilfully. The magistrates have been asked by the prosecution to state a case for the opinion of a higher court Judicial guidance will certainly be welcomed Last year other west-country magistrates (at Plymouth) fined an unregistered person £20 for calling himself an "osteopathic physician and surgeon" Needless to say, the Medical Defence Union was not contending for a monopoly of medical or surgical treatment. Captain Barrow was not summoned for manipulating his patients' limbs, any more than Mr McGuigan was summoned for using a stethoscope to the patient who gave evidence or for taking her pulse and temperature or for charging her what he called the nominal fee of 7 guineas Parliament has stated, in the preamble to the statute, the reason why the Medical Act was passed, it was "expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners" Parliament has not yet changed the law. The summonses determined by the magistrates last week were directed solely to the enforcement of the Act against the adoption of a description which blurs the distinction made by the Act. It is unnecessary to add that both defendants last week were men of unblemished character and could give the names of distinguished patients In Captain Barrow's case evidence was also given of his war services and his gratuitous treatment of the poor.

It is evidently wrong to suppose that the unregistered healer, in his choice of description, hugs the borderline so closely out of any set purpose to reap where he has not sown Osteopath, bone setter, masseur, or herbalist—the bearers of these descriptions create no confusion under the Act But the physio-medical practitioners who so very nearly call themselves medical practitioners, and the manipulative surgeons who seem to attach some special status and value to the statute-protected word "surgeon"—they are just the victims of circumstance, unhappy men who cannot help themselves Mr. McGuigan declared himself anxious to eradicate the impression that he was a doctor, people called him "doctor," but he had done his best to live it down So too Captain Barrow suggested that he was obliged to use the words "manipulative surgeon" to define and qualify his work He must add something to the adjective "manipulative", he did not want to be taken for a card manipulator. The word "surgeon," he said, implied that he manipulated the bones or parts of the body. He did not want to mislead anyone, he did not himself care what he was called; in re-examination he announced himself perfectly willing to use any kind of name that would aptly describe his work The manipulative surgeons, it is clear, are only too anxious to distinguish their description from the statute-protected descriptions in Section 40 It is just the inherent ambiguity and the limited vocabulary of the English language which makes their chosen descriptions a source of unwanted confusion

Protest against Jury at Inquest

At an Ilford inquest on Nov 14th upon the death of a cyclist as the result of a traffic accident, a solicitor, who appeared on behalf of a lorry-driver, protested against the composition of the jury He complained that they were "patriarchal", their average age seemed to be nearer 80 than 75 and, in his submission, they were totally unfit to inquire into motor accident cases He further objected to what he called the undesirable practice of summoning the same jurors time after time The jury returned a verdict of "accidental death" and exonerated the lorry-driver from blame, perhaps, therefore, the solicitor now feels more respect for the Polonius-like wisdom of the patriarchs of Ilford The law requires no more of a coroner than that he should summon not less than seven or more than eleven good and lawful men or women They must not be aliens (unless domiciled for ten years in this country), convicts, or outlaws. Nothing else is prescribed as to their qualifications. For other kinds of juries there is an age limit of 60—or rather persons under 21 and over 60 are not compelled to serve For a coroner's jury no age limit is specified in either direction In R v Divine, ex parte Walton, it was definitely laid down four years ago that to have a small panel of "regular jurymen" was an improper practice

PUBLIC HEALTH

Classification in L C.C Institutions

When the Local Government Act of 1929 was passed, it was obvious that the London County Council was faced with a gigantic task in fitting into a new scheme of things all the various establishments belonging to the boards of guardians which had administered the poor law in the metropolis In some ways their problem was more straightforward than that of smaller districts, since the aggregation of such establishments in a fairly circumscribed and populous area made classification less difficult than in the average county borough where they were few in number, or in the average county where they were often separated by distances which made specialisation of function administratively inconvenient London was also fortunate in that 28 of these establishments could properly be called general hospitals (in the sense of the Public Assistance Order 1930) and their control could be taken from the public assistance committee and handed over at once to the central public health committee But there were in London, as elsewhere, mixed institutions partly used for the treatment of the sick but not wholly so used to the number of 26 By Section 18 of the Act, since re-enacted in Section 122 of the Poor Law Act, 1930, the London County Council was enabled to delegate poor law functions to any committee without the reservation of subordinance to the public assistance committee which obtains with regard to purely poor law functions outside of London In exercising this power the Council provisionally handed over 12 of the 26 mixed institutions to be administered by the public health committee and 14 by the public assistance committee Apparently the complexity of the problems arising in connexion with the classification of the sick and other inmates, and with the structural betterment of these institutions, has been such that the Council is now considering concrete proposals These were presented on Nov 13th in the form of a joint report by the hospitals and medical services committee and the public assistance committee Generally the institutions referred to are often of considerable size and they accommodate, in addition to the acute and chronic sick such other persons as aged infirm, able-bodied chronic insane feeble minded and epileptic children (healthy and sick) and, in one institution, a few maternity cases The report proposes that the inmates should now be separated into two groups .—

(1) Inmates or patients to whom the primary approach should be medical (i e , those who should be seen examined and supervised by the medical officer without request by the inmate or by the attendant)

(2) Those who are in need of assistance because of destitution and do not fall within the above category

The former should be under the control of the hospitals committee, the latter of the public assistance committee

While the descriptions of the types of inmates of mixed institutions mentioned above have been used for many years in poor law administration it is a well known fact that their interpretation has not been uniform The report recommends that every inmate in the institutions with mixed populations should be individually classified according to the following scheme —

(a) *Able-bodied* —Persons physically capable of work

(b) *Healthy* —Healthy persons who, though not considered capable of continuous daily work are able to look after themselves and to attend dining hall, this class to include healthy aged, healthy deformed, healthy cripples, healthy feeble minded, expectant and nursing mothers

(c) *Infirm* —Persons who are normally able to get up and who, although not able to attend dining hall, could use a nearby dayroom, this class to include persons who require a certain amount of assistance from staff in dressing, toilet, or in moving from room to room, and also certain persons who in bad or cold weather may require to spend a few days in bed

(d) *Chronic sick.*—Persons suffering from any specific disease necessitating their confinement wholly or practically wholly to bed, this class to include persons who require daily and continuous treatment from the medical officer and also extremely aged persons who, though suffering from no specific disease, are confined to bed on account of extreme weakness

(e) *Mental cases*

(f) *Maternity cases*

(g) *Children 3 years and over* —(1) Healthy, (2) Sick

(h) *Infants* (*i e , children under 3 years*) —(1) Healthy (2) Sick

The institutions affected by this survey are as follows —

PUBLIC HEALTH ESTABLISHMENTS

Institutions —City of London, Constance road; Fulham Hackney, Hammersmith, Holborn, and Finsbury, St Mary Abbot's Hospital (institution), St Alfege's, St Leonards, St Pancras, South Grove, Lambeth Hospital (institution portion), St John's Hospital chronic sick)

PUBLIC ASSISTANCE ESTABLISHMENTS

Institutions —Bromley House, Poplar, Waterloo House, Islington, St Marylebone, Chelsea, Westminster, Swaffield road, Camberwell, Christchurch, Newington, Ladywell, Woolwich

Homes for the aged poor.—Lambeth Home, Langley House.

According to the scheme of classification, inmates falling into categories A, B, C, G (1), (pending transfer to the education committee) and H (1), (except infants separated from their parents) would be handed over to the public assistance committee, while those in classes D, E, F, G (2), H (1) (infants separated from parents) and H (2) would be under the responsibility of the hospitals committee

Obviously this desirable rearrangement will entail a considerable reshuffle of the institutional population in London At present about 4700 public assistance cases are housed in public health institutions and about 1600 public health cases in public assistance institutions With their redistribution there must be a transference of staff, furniture, and equipment In order to make it effective South Grove Institution, with 678 beds, will pass from the hospitals committee to the public assistance committee as from Jan 1st next, new cases will be allocated according to the above classification and transfer of inmates already housed will take place as opportunity occurs Sick wards will, of course, be retained in public assistance institutions for cases of acute illness of short duration among inmates but without special nursing staff Inmates will be allocated to either type of institution with due regard to accessibility to their relatives

When this process of classification and reorganisation is complete some 2300 beds which have hitherto been used for non medical cases in public health institutions will it seems, become available for medical purposes The report indicates, without going into detail that some of this accommodation will not be very suitable for its new purpose without some remodelling In fact it seems likely that the scheme can hardly be fulfilled in its entirety without structural work of some magnitude

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 10TH, 1934

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 0; scarlet fever, 3628; diphtheria, 1574; enteric fever, 21; acute pneumonia (primary or influenzal), 701; puerperal fever, 46; puerperal pyrexia, 108; cerebro-spinal fever, 10; acute poliomyelitis, 19; encephalitis lethargica, 4; continued fever, 1 (St. Albans); dysentery, 16; ophthalmia neonatorum, 70. No case of cholera, plague or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Nov. 19th–20th was as follows Small-pox, 0, scarlet fever, 1976, diphtheria, 2049, measles, 188; whooping-cough, 165; puerperal fever, 18 mothers (plus 7 babies), encephalitis lethargica, 265, poliomyelitis, 10, "other diseases," 272 At St. Margaret's Hospital there were 16 babies (plus 8 mothers) with ophthalmia neonatorum.

Deaths—In 121 great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 8 (1) from measles, 3 (0) from scarlet fever, 5 (0) from whooping-cough, 41 (9) from diphtheria, 38 (13) from diarrhœa and enteritis under 2 years, and 46 (14) from influenza The figures in parentheses are those for London itself.

Birmingham reported the only death from enteric fever Diphtheria proved fatal in 6 cases at Liverpool, 5 at Birmingham, 2 each at Leeds, Manchester, Newcastle on-Tyne, Wakefield, and Warrington Liverpool reported 5 deaths from diarrhœa, Birmingham 4 Deaths from influenza were widely scattered, no great town reporting more than 2

The number of stillbirths notified during the week was 262 (corresponding to a rate of 43 per 1000 total births), including 42 in London.

PANEL AND CONTRACT PRACTICE

Certificates and Certificates

FAMILIARITY breeds contempt. This adage is very true of the troubles of the insurance practitioner with his certificates He is so frequently signing and dating National Health Insurance form "Med 40" that he is apt to forget the exact wording of the certificate to which he is putting his signature. The part of the wording which is apt to be forgotten is "*I hereby certify that I have examined you on the under-mentioned date and . .* " and to overlook it is to risk the censure of the General Medical Council—a much more serious affair than the censure of the medical service subcommittee which is the common penalty for breaking this certification rule, often in a sincere desire on the doctor's part to help his patient Take, for example, a case sent into hospital for some seriously incapacitating disease A relative comes to the surgery with the statement: "The agent says you must give me a certificate otherwise I shall not get any money." Thinking to help in a deserving case, with the authority of the agent behind him, he may be tempted to certify that he has examined the patient on a date when in fact he has not done so and the patient was miles away in hospital The inference is that the agent never said anything of the sort He probably said he must have the doctor's certificate before he could pay, and the relative jumped to the conclusion that the insurance practitioner must be the doctor referred to, whereas the hospital doctor was intended It is never safe to give such a certificate, for even if the bona-fides of everyone concerned is beyond cavil, an accident may have occurred causing death between the time the patient was known to be alive in hospital and the date of giving the certificate When an insured person goes to hospital all that is required is a certificate from some responsible officer (not necessarily a doctor) that the patient was admitted on such-and-such a date. Later, a certificate will be required saying he was discharged on a certain date, but none in between When the insured person is an out-patient at a hospital his insurance doctor is required to certify his incapacity weekly according to the rules if, and only if, he has sent the patient to the hospital If an insured person goes to a hospital on his own account for treatment, the doctor attending him at the hospital should furnish the certificate of incapacity and the patient's insurance practitioner should refuse to do so The recent panel conference agreed with the Insurance Acts Committee and the approved societies that in the interest of all concerned practitioners should fill up that part of form "Med. 40" which says: "you should come to see me again on...... .day next" At present this is hardly ever done This, it is hoped, will save the days of delay of going to the doctor for a final certificate, but there will then arise the question of patients demanding *certificates on particular days of the week* This has always been resisted by the profession, with the support of the Ministry of Health

THEIR INFINITE VARIETY

Let us suppose that in a fairly large insurance practice there are 30 insured persons requiring weekly certificates—not a very large number in a week when spread over six days But if they all come up on a Monday morning for a certificate and for a repeat of medicine (whilst they were there) probably the shortest time in which they could each enter the consulting room, have their medical record card found, ask for a continuation certificate together with medicine if required, and go out again, would be three minutes. This would of course be increased if any physical examination or dressings were required Thirty patients at three minutes each makes an hour and a-half of surgery time occupied simply in giving certificates Obviously it is impossible to allow all insured persons to come up to any particular consultation time for certification So much for insurance certificates such as first, intermediate or final But that does not by any means complete the list There are intermediate convalescent and special intermediate certificates, certificates of death, voluntary certificates, certificates when the diagnosis is not recorded as precisely as the doctor knows it, certificates for tuberculosis officers, reports for regional medical officers, certificates under clause 7 (ii) of the terms of service, ophthalmic certificates, dental certificates, and the list is then not complete This array of certificates is often a source of amusement to students in medical schools when lectures are being given on National Health Insurance regulations They are inclined to wonder why one form cannot be used for everything. Add thereto that these insured persons are also able to claim certificates that are commonly required for any adult, whether insured or not, then the number that may be required is indefinitely increased

OUTSIDE THE ACT

The Lanarkshire Medical Practitioners' Union have drawn the attention of the Committee on Scottish Services to the time factor in the filling up of the multitude of certificates required of them at the present time There has been, they say, a great increase in the calls made upon the profession for the issue of all sorts of certificates The demand made by public health and other authorities for certificates from medical practitioners has expanded beyond reason and seriously limits the time available for clinical treatment. The certificates are required to protect all kinds of schemes and funds, the doctor often being used simply as a buffer, or exploited because he is prepared to assist his patient in matters outside the routine of his profession, e g , in certifying the application for a passport He cannot well refuse an old age pensioner, unable to go to the post office to get his pension, who therefore requires at regular intervals evidence of incapacity, or that he is still alive Certificates are often required for children who have to be seen but are away at school when the visit is made As the Lanarkshire doctors say, "this is the type of certificate which legislation and regulation are constantly adding to the burden of the general practitioner" Their feeling is that they should not be required to grant certificates if other evidence be available They have compiled for their own use a list of certificates other than those required under the N H I Acts, with suggested minimum charges The list is not exhaustive The passport certificate for instance is not included , nor is, to go further afield, the certificate that the blood of the mother of an illegitimate child, which is to be adopted, gives a negative Wassermann reaction The list is interesting in showing the charges made in Scotland for certificates when charges can be made

LANARKSHIRE MEDICAL PRACTITIONERS' UNION
MINIMUM CHARGES FOR CERTIFICATES

1 Works Societies—No charge
2 Works for Compensation—If under Scheme no charge —otherwise 1*s*
3 Certificate for Friendly Society (Fitness for Membership, 2*s* 6*d* or Sickness, 1*s*)
4 Fitness for Work after period of sickness when unemployed—Not necessary
5 Fitness for Convalescent Home—No charge
6 Accident Claims against Insurance Companies and Newspapers—Minimum 5*s* 21*s* if report
7 School Teachers for Education Committee—Minimum, 2*s* 6*d*
8. Certificate of Sickness for Employer—1*s*
9 Health Certificate for young person entering Bank, &c —Report, 21*s*
10 Certificate on Soul and Conscience for juror or witness unable to attend Court—10*s* 6*d*
11 Certificate for girl entering physical culture training, nursing, massage, training, &c —5*s*
12. Certificate to child as free from infection—Consultation fee
13 Police Constables Certificate for superiors—Covered by visiting Fee
14 Court Certificate to substantiate claim—21*s*
15 School (absence) Certificate—Refuse unless parents summoned to Court
16 Certificate to Labour Exchange recommending change of employment—Refuse
17 Factory Medical Certificate for scheduled industrial disease
18. Lunacy Certificate
19 Certificate of Mental Deficiency in children
19A Colliery Firemen's Certificate under Mines Act
Fees fixed by Statute
20 Welfare Nourishment Lines—Refuse
21 Certificate to person unable to go to Post Office for Pension—No charge
22. Certificate for Employer who insures against loss of Workers' services—5*s*
23 Certificate under the United Services Fund—No charge
24 Certificate of Fitness or Unfitness for Work—Covered by No 4
25 Blue Form for Pension—No charge
26 Motor Driver's Licence—Minimum, 5*s*
27 Ministry of Transport re Conductors—Minimum, 5*s*
28 Preliminary Examination of Police Recruits—Minimum, 5*s*

ROYAL COLLEGE OF SURGEONS OF ENGLAND

ANNUAL MEETING OF FELLOWS AND MEMBERS

Sir Holburt Waring presided at the annual meeting of Fellows and Members held at the College on Nov 15th and moved the adoption of the annual report and accounts He outlined the arrangements for holding the primary F R C S examination in Australia, New Zealand, and India at the end of the year and said that the number of overseas candidates for the Fellowship is steadily increasing He explained the new regulations which the College has made for admission to the final examination and which come into force at the beginning of next year A candidate for the final Fellowship must have passed the primary examination and be either a member of the College, who has studied medicine not less than six years or a graduate of four years' standing in a recognised university who has held a resident hospital appointment for not less than six months in charge of general surgical patients Members of the College would thus have three or four years' advantage over non-members

Replying to a motion to allow members of ten years' standing to take the final Examination without sitting for the primary, Sir Holburt declared that such a concession would lead to uncertainty in the standard and to justifiable discontent among those who could not obtain it. He read the statement of the College's views on patent medicines legislation which has been sent to the Committee on Scientific Research of the Economic Advisory Council, this expresses the opinion that the problem can only be adequately dealt with on the lines laid down by the select committee of 1914 by bringing the sale of proprietary medicines and appliances under the control of the Ministry of Health Such a control, the College considered, should ensure that the article in question is not injurious , that the description of its therapeutic action is not fraudulent , that its sale and the methods of its advertisement are not against the public interest , and that no medicine or appliance is advertised as a cure for any of a specified list of intractable diseases

Sir Holburt announced that the College, together with the Royal College of Physicians, had submitted to the Privy Council a memorandum approving of the suggestion that a charter should be granted to the Incorporated Society of Chiropodists, provided that the scope of the work is suitably limited to ensure that any operation on deformities or on structures below the true skin, or the use of anæsthetics, shall be carried out under medical supervision.

Mr F McG Loughnane, F R C S , moved—

> 'That this forty fifth annual meeting of Fellows and Members of the Royal College of Surgeons of England reaffirms that the Members who constitute ninety per cent of the College should have some representation on the Council, a similar resolution having been passed forty four times and never once lost.

The resolution was seconded by Mr Percy B Spurgin, M R C S and carried with a single dissentient.

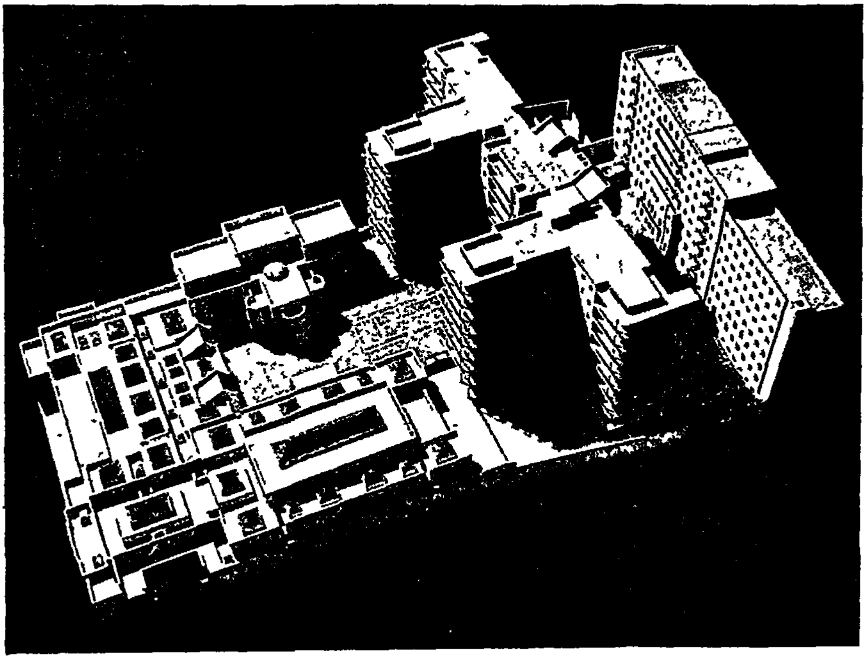
NEW MATERNITY BLOCK FOR LEAMINGTON HOSPITAL. It has been decided to erect another maternity block to accommodate 20 patients It will cost £20,000

CHRISTMAS COMFORTS FOR PENSIONER PATIENTS —The Order of St John and the British Red Cross Society have arranged through the Ministry of Pensions as in previous years to provide additional comforts for men in Ministry hospitals on Christmas Day There are ex service pensioners in other hospitals as a result of war disabilities and the Joint Council wishes to hear of them so that no eligible case may fail to receive the gifts The address of the Joint Council is 12, Grosvenor-crescent London, S W 1.

A NEW GREAT ORMOND-STREET HOSPITAL

AN appeal is made this week for £400,000 with which to reconstruct the Hospital for Sick Children—justly described by the Prince of Wales, its president, as the most famous children's hospital in the Empire For over 80 years, the Prince points out, it has been fulfilling its mission. "Just because it was the first in the field it has, of late years, fallen far behind modern standards of efficiency, not in treatment but in accommodation and equipment, and now nothing short of a complete reconstruction of its old-fashioned buildings will enable it to maintain its great ideals and traditions."

The accompanying illustration—from the photograph of a model—shows the projected new buildings The area they cover stretches from Great Ormond-street (on the left) to Guilford-street (on the right). The present ward blocks lie along the Great Ormond-street frontage, to the south of the area, and are sheltered from sunshine by surrounding buildings Under the new plan the wards will be set back 250 ft ; and the single-storeyed out-patient departments erected in their place will do nothing to keep the light from them. The two L-shaped blocks, joined by a central section, will readily be identified in the photograph : the nearer, the medical ward block, is to have 164 beds (25 for tonsils and adenoids), while the further, or western, is the surgical wing with its 130 beds, between them the central section provides kitchens, laboratories, a double theatre suite, and accommodation for paying patients in 35 one- or two-bed units To minimise the risk of infection no ward will have more than eight beds, and all will have ample balconies on at least two sunny sides Even in mid-winter the sunshine will penetrate to all ward windows



Architects Stanley Hall and Easton and Robertson

The Hospital for Sick Children as it is to be The Great Ormond-street or south frontage is on the left and the Guilford-street frontage on the right

At the top right-hand corner of the picture, built along the south side of Guilford-street, is the new nurses' home, already complete, in which every sister and nurse has a separate bedroom The rest of the Guilford-street frontage will be occupied by a building, continuous with the nurses' home, embodying the boiler house and quarters for the rest of the staff. The administration will remain in remodelled building in Powis-place, centred around the chapel, which remains unchanged and is to be seen in the photograph on the west side of the new central garden

All this cannot be done suddenly, for the business of the hospital has to go on as usual during alterations The plan of campaign is outlined by the architect, Mr E Stanley Hall, F R I.B A., in one of several articles appearing in a four-page advertisement supplement to last Tuesday's *Times*, where many further illustrations and particulars may be found The new nurses' home, as we have said, is already in being, and small additions to the out-patient department are also finished. The next building to be erected will either be the medical ward block (which will cost nearly £80,000) or the central section with its kitchens, laboratories and pay-beds (£55,000) Both are urgently needed. Then, in turn, come the completion of the staff house (including the boiler house), and of the surgical unit (£75,000) When these are ready the patients can be moved out of the old buildings, and in due course these will make way for the out-patient departments.

The new design makes brilliant use of the old site, and with its country branch at Tadworth-court (whose first open-air pavilion was described in THE LANCET of June 4th, 1932) the hospital will again have accommodation and opportunities worthy of its great name We trust that there will be a very prompt and generous response to the appeal

The Princess Royal has announced her intention of attending a meeting at the Mansion House on Tuesday, Dec. 11th, when the Archbishop of Canterbury will recommend it to the public

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FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—Dr. A. E Clark Kennedy will speak at the Medical Society of London, Chandos-street, on Tuesday, Nov 27th, at 2 30 P M , on Goitre, and at 2 30 P M. on Dec. 4th on Glycosuria On Nov. 28th, at 8.30 P M, Dr C E Lakin will lecture on diet in deficiency diseases The following courses will take place during the last six weeks of the year infants' diseases at the Infants Hospital Vincent-square, S W-(Nov 26th to Dec. 8th); dermatology at the Blackfriars Skin Hospital (Nov 26th to Dec 8th); chest diseases, at the Brompton Hospital (Dec. 12th to Jan 11th) Further particulars may be had from the secretary of the fellowship, 1, Wimpole st, W 1.

CORRESPONDENCE

ELECTION OF DIRECT REPRESENTATIVES TO THE G M C

To the Editor of THE LANCET

SIR,—May I have the courtesy of your columns to express my thanks to the registered medical practitioners of Scotland for the renewal of their confidence in their Direct Representative on the General Medical Council I am, Sir, yours faithfully,

Edinburgh, Nov 15th NORMAN WALKER

LONDON UNIVERSITY AND ITS MEDICAL SCHOOLS

To the Editor of THE LANCET

SIR,—As a member of the court and of the senate of the University of London I have been impressed by the very small proportion of students studying at London medical schools for a London degree who actually complete their course and proceed to a degree That this ratio is indeed glaringly small will be evident when I mention that in one recent instance a medical school reported in a certain year 33 students as following courses for the London medical degree, but only one actually graduated When we consider the very large sum—over £100,000 for the current year—which the court of the University distributes as grants to the medical schools of London such a result cannot fail to be disappointing It has been explained in various ways at interviews which the court has held with the medical schools, the principal reason given has been that owing to economic stress students have been obliged to enter practice with lower qualifications than the degree, and have been unable to wait to take the degree itself They have thus wasted as regards any university recognition several years of education of the highest university standard, and their position is all the more galling as London University students at the medical schools meet with large numbers of students who come for their clinical training from the older universities to the medical schools, and these students come to London with a degree (usually B A) *from* their university as a result of three years' study in medical sciences, whereas the London University student, after three years' equivalent study, achieves only the second M B examination, which is of an intermediate and *not a degree status, although* the subjects and the level of attainment in them are entirely comparable with those which qualify *for* a B A degree at the older universities Statistics supplied by the schools demonstrate that the majority of students entering for the London degree pass the second M B but are unable to stay the course for the third examination The London University student is thus obviously handicapped as compared with his fellow student from the older universities This is a grievance of old standing, and I submit that the time has come to rectify it, in the interests both of the students themselves and of the University, which is deprived of large numbers of students who by the standards of the older universities would have taken a degree This would be an advantage to the student even though he failed subsequently to pass the qualifying examination for M B, B S, and the reform would incidentally remove the reproach that the London medical schools produce very few medical graduates of London University

The remedy I propose is that the senate should create a new degree in the faculty of medicine which might have the name of Bachelor of Medical Sciences, attainable after a three years' course of study This name is suggested to me by my recollection of the effort made some 30 years ago to found an "Institute of Medical Sciences," which would have covered all the subjects leading to the second M.B examination, but the name adopted is a secondary *consideration* so long as it involves a degree This degree would be a degree in the faculty of medicine as the Bachelor of Pharmacy now is It would take the place of the present second M B examination and would of course not be a registrable qualification to practise medicine To give this degree a standing comparable with the other degrees of the University the standards of the first and second M B examination would where necessary have to be raised to the level of the intermediate and final examinations in other *faculties* Such an adjustment would not be difficult and the stiffening of the earlier examinations would not in the long run hurt the student, who would find out his weakness before wasting time upon a hopeless task

I submit this proposition for consideration by the teachers in medical schools of the University who are primarily interested in the matter, and this letter is written in the hope of eliciting their views.

I am, Sir, yours faithfully,

E. GRAHAM-LITTLE

House of Commons Nov 16th

CHEMICALLY BLEACHED FLOUR

To the Editor of THE LANCET

SIR —Dr Oliver's letter in your last issue is very opportune. I was a member of the Departmental Committee on the Treatment of Flour with Chemical Substances which was appointed by the Minister of Health in 1924 to inquire into the subject, and which issued its report in February of 1927 The members of that committee saw the actual bleaching processes in operation at a number of mills, and took a considerable amount of evidence The salient points of their report so far as bleaching is concerned were —

(1) Bleaching of flour was introduced into this country about 1903 to enable the millers to compete with the natural bleached commodity offered by flour importers, and so to supply the white flour for which a large demand had arisen The departmental committee was informed that a number of millers who formerly declined to bleach their flour found themselves obliged to adopt the practice in order to compete with their rivals, but that some of them would not regret having to abandon bleaching if its use were universally prohibited

(2) That bleaching eliminates the difference in appearance between the *higher and lower grades of* flour, so that the lower grade flours can be given the brightness and colour of top grades

(3) So long as a great demand exists in this country for very white breads, some form of bleaching process must be permitted

(4) Chlorine is capable of altering the composition of gluten in such a way as to affect injuriously its nutritive value and in view of that and similar considerations the treatment of such an important food-stuff as flour with chlorine or nitrogen trichloride is undesirable

(5) Benzoyl peroxide owes its bleaching properties to its power of oxidising the colouring matter of the flour It leaves as a residue in the flour benzoic acid and it were better that flour should not contain any benzoic acid

(6) Nitrogen peroxide produces in flour definite changes which can not be regarded as entirely free from objection, but from the fact that nitrogen peroxide is less reactive than chlorine with proteins and fats and that excessive

quantities are not required, it is perhaps permissible to regard its addition to flour less unfavourably than the use of chlorine.

In my opinion the principal objection to the bleaching of flour by chemical agents is that it necessitates the removal of the germ and a considerable proportion of the pericarp and aleurone layers of the wheat grain, and as it is in these portions of the wheat grain that vitamin B, the most important vitamin in flour, resides, it follows that bleached flour is deficient to a great extent in that vitamin. It was given in evidence before the departmental committee that there is no agent except sulphur dioxide (which is for many reasons unusable) which will bleach bran and fibre, and therefore for the effective bleaching of flour the germ and the greater part of the branny particles must be removed beforehand. In addition we do not know what effect these powerful bleaching agents may exercise on vitamins; it is possible that they may so alter them as to impair irremedially the nutritive value of the food which contains them. In the United States of America the bleaching of flour has to be declared, and in Pennsylvania, North Dakota, and Wisconsin the sale of bleached flour is prohibited.

It is very desirable that a campaign should be started in this country to disabuse the public mind as to the imaginary superiority of very white bread, and to impress upon the public the greater advantages, both from the dietetic and health points of view, of bread prepared from unbleached and untreated flour. Such a campaign, to carry any prospect of success, should be conducted by some responsible public body.

I am, Sir, yours faithfully,

ARTHUR P. LUFF.

Limpsfield, Surrey, Nov. 17th

THE SWAB IN DIPHTHERIA DIAGNOSIS

To the Editor of THE LANCET

SIR,—Many practitioners have commented recently on the not infrequent negative report from the bacteriologist in cases of clinically typical diphtheria. The following experience which I had last summer has confirmed an impression I have had for some time past with regard to the unsuitability of some ordinary bacteriological methods when *gravis* bacilli are concerned, and may serve to explain some of the discrepancies between bacteriological and clinical findings which have recently been reported.

I was asked to investigate a small outbreak of diphtheria in a residential school. Swabs were obtained from the patients and a number of contacts, and were inoculated on to Loeffler slopes, from which subinoculations were made 24 hours later on to Horgan and Marshall's blood tellurite plates. Smears, stained by Albert's and Neisser's methods, from overnight cultures on Loeffler's medium revealed very few typical *C diphtheriæ*, even from the most typical cases, although organisms which appeared to be barred diphtheroids or elongated *C. hofmanni* were numerous. On the other hand, from all the cases and many of the contacts, the subcultures on Horgan and Marshall's medium[1] yielded black colonies, with the subjacent whitening given by *C. diphtheriæ* which is noticeable when digest glucose broth is used as the basis of the medium (O'Meara and Parish[2]), *in every instance the organisms were of the* gravis *type described by the Leeds workers, and proved to be virulent to guinea-pigs.*

This confirmed our previous impression that Loeffler swab cultures are unsatisfactory for the recognition of certain strains of *C. diphtheriæ gravis*, since the morphology is often aberrant; polar-staining may be absent, and the organism may assume the appearance of a barred diphtheroid or a somewhat elongated Hofmann's bacillus. After several generations on Loeffler's serum the usual morphology of the diphtheria bacillus, with typical polar-staining, may be acquired. Anderson, Happold, McLeod, and Thomson[3] have also made the same observation that "on Loeffler, granules of *C. diphtheriæ gravis* are sometimes well marked but may be scanty."

I feel that some of the discrepancies between clinical and bacteriological findings to which attention has recently been drawn may be due to the use of Loeffler's serum. There is strong evidence that the *gravis* type of bacillus is appearing in new areas in England. It is possible that bacteriologists, by following what has hitherto been generally regarded as a safe routine method of culture on Loeffler slopes, and staining for polar granules, are at times being led into error, and are missing *gravis* bacilli in routine diagnosis. It is therefore suggested that bacteriologists (and they are many) who are at present relying solely on Loeffler's medium should use a tellurite medium—e g., McLeod's or Horgan and Marshall's—in conjunction with it as a routine. An additional argument in support of this recommendation is that Loeffler's medium is not easily prepared well by the worker in a small laboratory. Horgan and Marshall's medium, on the other hand, is very easy to make.

McLeod's tellurite medium is extremely useful for rapid differentiation of *gravis*, *mitis*, and *intermediate* types, often the colonies observed after only 24 hours incubation are quite typical. Although this is an excellent medium, and may be used for primary cultivation and isolation as a substitute for Loeffler's serum, it is, unfortunately, somewhat difficult to prepare. We are under the impression that it is not always being made precisely as in the Leeds laboratory, so that in practice it does not give as rapid and excellent differentiation as has been obtained there. Horgan and Marshall's medium, modified by the addition of 0·5 per cent glucose to the digest broth basis, can be recommended with confidence. It is as easy to prepare as ordinary blood agar.

On this medium typical small black colonies appear usually after over-night incubation, and when those are picked up on a platinum loop the subjacent medium shows whitening, if the organisms ferment glucose—an easy method of differentiation of *C. diphtheriæ* and *C xerosis* from *C hofmanni*. With very rare exceptions all other organisms are inhibited, so that a much heavier inoculum can be used than for isolation on Loeffler's serum. In our own work we have for two years used as a routine Loeffler slopes, the over-night growths from which are heavily subcultured on to Horgan and Marshall's plates, irrespective of whether they are microscopically positive or negative. In many instances we have successfully isolated on the tellurite medium virulent organisms which would otherwise have been missed.

Although Horgan and Marshall's medium is so useful for isolation, the diphtheria organisms grown upon it appear shorter than on Loeffler's serum, and the polar-staining of all the Leeds types—*gravis*, *mitis*, and *intermediate*—is suppressed. Moreover, the *gravis* and *mitis* strains do not give rise to two distinctive types of colony as on McLeod's medium, a drawback which can be overcome by the subsequent inoculation of starch tubes which will readily enable the bacteriologist to make a diagnosis of type.

A further point of some importance is that Albert's method[4] appears to be more useful for staining polar bodies than Neisser's method which is still widely used.

In conclusion, if the relatively simple combined Loeffler-Horgan and Marshall technique is adopted, it is suggested that the bacteriologist should submit (*a*) an early provisional report as a result of his amination of direct smear (to exclude Vincent's gina) and Loeffler's swab culture, followed by a final report when he has completed his examina- n of Horgan and Marshall plates, and, where cessary, performed tests for virulence The clini- n for his part should realise that an early negative port *may* be unreliable and subject to revision e position is admittedly unsatisfactory, since the lue of the swab would now appear to be often ministrative rather than clinical As has often en emphasised before, the only safe course open the practitioner is to rely solely on his own judg- ent and administer antitoxin without delay, enever this is indicated on purely clinical grounds

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[1] Jour of Hyg, 1932, xxxii, 544.

[2] Jour. Path. and Bact, 1933, xxxvii., 165.

[3] Jour Path and Bact, 1931, xxxiv, 667.

[4] See Mackie, T J, and McCartney, J E: Practical Bacteriology, 4th edition, Edinburgh, 1934, p 161.

I am, Sir, yours faithfully,
H J PARISH

Wellcome Physiological Research Laboratories,
Beckenham, Nov 10th

CLINICAL SIGNS OR MECHANICAL MEASURES?

To the Editor of THE LANCET

SIR,—In these days when mechanical examinations e so much in vogue, clinical observations are often erlooked and methods of value, involving only eyes, rs, and hands, are unknown or disregarded Owing the rapidity with which rubber perished in the opics where I worked for many years, I was driven to nd an alternative to the mechanical blood pressure pparatus I happened to observe that I could stimate the blood pressure with considerable accuracy y tracking the aortic sounds from the second right ostal cartilage upwards and outwards to the angle elow the clavicle under the deltoid origin

I have found the method especially valuable in dging normal blood pressure, thereby saving time n the examination of patients But no more can I do his, because recently a patient and another doctor ave as it were, censured me for not "taking the lood pressure" with bag, bellows, and Baumano- eter, in order to find it normal I have long reasured my simple clinical discovery, but, though t provides me with an accurate idea of circulatory ension, I must put it away and rely only on echanical methods so that patients, and doctors, ay rest assured that the normal has been discovered s the only way of which they have heard

I am, Sir, yours faithfully,
London Nov 15th V S HODSON

ACRIFLAVINE FOR SCHISTOSOMIASIS AND ANKYLOSTOMIASIS

To the Editor of THE LANCET

SIR,—In your issue of April 28th Fisher stated hat in his experience schistosomiasis can be success ully treated by oral administration of acriflavine n July 21st Fakhry reported that trypaflavine riflavine) has no effect on schistosomiasis, but s a useful anthelmintic in ankylostomiasis On ept 8th Diwany claimed that acriflavine differs om trypaflavine, and said he had obtained good sults with it in the treatment of schistosomiasis.

Trypaflavine is regarded by many authorities as the same compound as acriflavine The first originated s a German patent and the latter as a British patent hemical analysis of several samples of these drugs as carried out in the Research Institute Cairo by r A Hassan with the following results —

(i)—Trypaflavine (Bayer sample No 2852) described as ride of 3 6 diamino 10 methyl acridine, did not e a precipitate with silver nitrate The chlorine in combination was estimated to be 13 48 per cent The amount of chlorine calculated for the compound $C_{14}H_{14}N_3Cl$ is 13 68 per cent

(ii)—2 8 diamino 10 methyl acridine chloride hydro chloride (Boots No 812) gave a copious precipitate with silver nitrate The total chlorine content was 23 64 per cent The amount of chlorine calculated for the compound $C_{14}H_{14}N_3Cl$ HCl is 23 98 per cent

(iii)—Diamino methyl acridine (May and Baker) gave a copious precipitate with silver nitrate It is thus apparent that it is like the former compound a hydro chloride The total chlorine content was found to be 23 56 per cent

The first compound is a dark brownish-red crystalline powder, fairly soluble in water, the other two are red powders freely soluble in water The two English products are supposed to be acriflavine They differ from trypaflavine in being the hydrochloride salt

Exhaustive trials in the Research Institute[1] demonstrated that these compounds have no curative effect in schistosomiasis As an anthelmintic in ankylostomiasis they were tried in 4 cases One patient received 4 g of trypaflavine in 20 days (the daily dose was 0 2 g) and examination after two months revealed ancylostoma ova The second received a total of 0 9 g of trypaflavine in nine days (the daily dose 0 1 g) and he was also still harbouring the worms after two months The third had 0 2 g daily for seven days An ova count was made daily for ten days, and was found to range between 13 and 15, the stools were constantly positive for ova The fourth received 0 2 g of trypaflavine for seven days, and the daily ova count ranged between 2 and 3 ova during ten days No worms were expelled in the last two cases The stools were collected daily and searched for worms Thus trypaflavine has no anthelmintic action in ankylostomiasis, and it does not affect the number of ova laid by the worms.

I am, Sir, yours faithfully,
M KHALIL,
Director, Research Institute Public
Oct 22nd. Health Department Cairo

THE DETECTION OF THYROTOXICOSIS

To the Editor of THE LANCET

SIR,—Those of us who are daily preoccupied by the need for some reliable test for thyrotoxicosis would have reason to heave profound sighs of relief if experience had made it possible to support Mr Lambert Rogers's advocacy of Goetsch's test To warrant faith in any test for toxic goitre it appears to me to be essential that —

(1) It must be "positive" in a high percentage of cases proved subsequently, both pathologically and clinically, to be thyrotoxic in nature

(2) It must be "negative" in normal individuals and a portion in those suffering from thyroid deficiency

When we examine Goetsch's test and its various modifications in the light of these criteria it proves fallacious on the following counts —

(1) It is approximately as often "negative" as "positive" in cases of frank thyrotoxicosis This is based on my own observation of over 1000 cases in which the test has been rigidly applied

(2) It is "positive" in 20 per cent of normal individuals (Van Wangenen)

(3) It is also "positive" in 65 per cent of cases of "irritable heart" (Tomlins Sturges, and Wearn)

(4) It is sometimes "positive" in myxoedema (Boothby)

Could unreliability be more strikingly exemplified?

In obscure cases Dr Robertson's particular method of checking B M R estimations before and after "saturation" of the patient with iodine will, I believe prove in the long run to be infinitely more exact than Goetsch's test—in fact than any other test at present available. I am still in doubt as to the specificity of the "impedance angle" method so ably developed by Dr. Brazier, partly because it does not appear to be modified by iodine therapy as would be expected did it run parallel with thyrotoxic activity. I hope, however, that the difficulties associated with the interpretation of Dr Brazier's test will eventually be cleared up; while they still exist I fear we must still rely on our clinical judgment backed up by careful estimations of the B M R.

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[1] Described by Prof Khalil Bey in THE LANCET of Oct. 20th p. 862

I am, Sir, yours faithfully,

London, Nov. 19th. CECIL A. JOLL.

CURARA IN TETANUS

To the Editor of THE LANCET

SIR,—In his letter in your last issue, Dr Leslie Cole mentions the "lissive" action of curara. Research on this subject is difficult and has marched slowly Some curares do appear to be better than others in their power of selectively removing various conditions of muscle spasm both in animals and in man The specimen used by Dr Cole in his recently recorded cases of human tetanus has a moderate lissive power, as tested on parathyroidectomised dogs Similar specimens reduce the rigidity of spastic paraplegia and of parkinsonian rigidity, in doses which produce no apparent paresis It is, I think, this lissive property which Dr Cole has now demonstrated for the first time in human tetanus

The case of curarine is a different one This alkaloid, though responsible for the ordinary paralysing action of curare, has not hitherto shown the power of removing pathological rigidities selectively. Curarine obtained from the same source as that which Sir Henry Dale supplied to Prof Florey—a consignment of *Strychnos toxifera* sent to me from British Guiana—has been under pharmacological investigation in this laboratory during the past year. It has no lissive action on parathyroid tetany in dogs, or on the spastic paraplegia of a case of disseminated sclerosis My supplies were insufficient for its trial in the one case of human tetanus to which I have recently had access, but I should not expect that pure curarine given subcutaneously would remove tetanus without causing coincident weakness Nevertheless I hope that it may be of use in the treatment of tetanus, for I find that when given in toxic doses to man its action is to paralyse the muscles supplied by cranial nerves and the flexors and extensors of the neck, whilst only weakening those of the limbs and leaving respiration unembarrassed.

I hope that full reports upon the actions of active principles derived from various curares and from certain strychnos plants will be available shortly But I think Dr Cole is right in drawing the attention of Prof Florey and his collaborators to the literature of selective actions of curare as offering a possible explanation of a discrepancy between their two findings I am, Sir, yours faithfully,

RANYARD WEST.

University Department of Pharmacology, Oxford, Nov 18th

FITNESS FOR PUBLIC SERVICE

To the Editor of THE LANCET

SIR,—The Local Government and Other Officers Act, 1922, was intended to provide pensions for medical officers when they retired. It was not passed for the purpose of providing a public medical service personnel equal in physical fitness to that of the fighting services But this is what is now happening

It is common knowledge that many who now hold responsible positions as medical superintendents of sanatoria and as tuberculosis officers took up such work because they had had pulmonary tuberculosis at the start of their medical career Many such doctors have given 20 years or more of useful work, but those of us now in a similar position find it absolutely impossible to obtain any post with a public authority, no matter for how long we may have been well and working. The actuarial basis of the superannuation scheme is a "first class life," and as such we are forthwith rejected, and this despite the fact that such employers as banks, insurance companies, &c., are constantly advised that sanatorium patients are fit for work and constantly accept them back, in many cases making special arrangements for them on their return One of us has been working now for five years with an artificial pneumothorax, and the other of us for three years with an artificial pneumothorax, without symptoms of any sort, yet we find it impossible to obtain work with a public authority. We are working at a voluntary sanatorium, where the medical superintendent is allowed to exercise his sound clinical judgment in the selection of his medical officers.

Would it not be possible to use a little clinical judgment, instead of a rule of thumb rejection, or alternatively to assess the disability and ask for increased contribution for the superannuation fund—though this fund is a *retiring* and not a sickness benefit fund?

We are, Sir, yours faithfully,

FIVE YEARS ARTIFICIAL PNEUMOTHORAX, M R C P. (Lond)

THREE YEARS ARTIFICIAL PNEUMOTHORAX, M D.

Nov 19th

IRELAND

(FROM OUR OWN CORRESPONDENT)

A MILK BILL

THE second reading of the Government's Milk Bill was carried without a division in the Dail last week. Dr C. Ward, parliamentary secretary to the Minister for Local Government and Public Health, who was in charge of the Bill, said that the object was to improve the purity of the milk supply and to ensure its freedom from contamination and infection. Despite the value of milk as a food the consumption in Ireland was substantially below that in other countries, but it would be unwise to advocate a general increase in consumption of milk until precautions were taken to ensure that it was derived from healthy animals, and free from contamination and infection The experiences of the scheme for providing free milk for necessitous children had shown that milk vendors were ready to adopt progressive methods Discussion was concerned with omissions from the Bill which tended to diminish its effectiveness In particular it was pointed out that no attempt was made to deal with the problems of tuberculosis in cattle as a whole, and that mere control of the production of milk was unlikely to abolish the possibility of infection by the tubercle bacillus Attention was drawn to the absence of a definition of "dirty milk" and to the absence of any provision to empower a local health authority to inspect the production of milk outside its boundaries which might be offered for sale within its boundaries The absence of any prohibition of the sale of milk without a licence was also criticised The obvious difficulties of administration were stressed, and in particular the absence of any machinery for administration in those counties for which no medical officer of health had been appointed The Parliamentary Secretary expressed his sympathy with some of the objections raised and his willingness to give careful consideration to amendments that might be brought forward

Dr Ward also obtained the second reading of another Bill dealing with the milk supply —the Sale of Food and Drugs (Milk) Bill, 1934 He said that in present circumstances when a defendant offered evidence that milk which he had sold, which had been found to be deficient in fats, was as it came from the cow, and if that could not be disproved there could not be a conviction The measure he brought forward provided that deficiency in fats would be conclusive evidence of an offence This important change in the law was given a second reading without discussion If it becomes law then all milk offered for sale must come up to the standard as regards fat content

THE ST JOHN AMBULANCE BRIGADE AND MATERNITY WELFARE

The St John Ambulance Brigade has been carrying on for several years an important bit of work in maternity welfare in Dublin For some months before and after their confinement women of the poorest class are supplied daily with free dinners in four dining rooms in different quarters of Dublin Last year no less than 48,000 such dinners were served, and, in addition the women were given 10,912 pints of soup to carry home The entire work has been organised by the St John Ambulance Brigade, which in the earlier years also made itself responsible for financing it In recent years, however, the maternity welfare service of the city of Dublin contributes about two thirds of the expense The entire cost last year amounted to £1159, or approximately 5½*d* per dinner

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

ON Nov 10th the Royal Assent was given by Royal Commission in the House of Lords to the Betting and Lotteries Act, the Expiring Laws Continuance Act, the Poor-Law Act, and other Acts

Medical Certificates of Fitness for Marriage

In the House of Lords on Nov 14th Lord KILMAINE moved

> "That the marriage laws should be so amended as to make it obligatory for both parties to the proposed marriage to produce medical certificates of fitness when they come before a minister of religion, or the civil authority

The certificates should be signed by some competent medical authority, the fee for them fixed at as low a figure as possible; and some steps taken to ensure that the answers given were true He proposed four certificates: (1) Certificate "A,", the "All clear," showing that the parties were perfectly fit to marry and to raise a family, (2) Certificate "B," which would show that for some reason of health it was advisable that there should be delay, but that the parties might present themselves again three or six months hence—this would be a most important provision in the case of suspected venereal infection, (3) Certificate "C," which would say that the parties could marry without danger to each other, but for family or other reasons it must be a childless marriage It was wicked and criminal to bring children into this world unless there was a reasonable prospect of their being able to lead healthy, happy, and useful lives Some form of birth control must be employed for the unfit; he hesitated to suggest sterilisation (4) Certificate "D," would prohibit marriage altogether

That certificate would be given in a case in which it would be considered that not only would there be danger to the children, but that there would be definite danger to the parties themselves He hoped that by Certificate "D" the parties would be helped to realise that they had had a lucky escape He also hoped that Certificates "B" and "C" would come to be regarded by the parties themselves as necessary safeguards against much misery and unhappiness both to themselves and to any possible offspring Besides the menace of hereditary disease there was the further problem of close in-breeding Too often the result of marriages owing to close blood relationship, was that the children though physically well-developed were mentally deficient The asylums of the country were full of such people The cost to the State of the public mental services of this country must be enormous In the case of one big county asylum the statistics were staggering He could not reconcile the extraordinary care taken by breeders of pedigree stock pedigree herds, pedigree dogs and other animals with the almost total neglect of the human race Practically nothing was done to protect the next generation

The fearful increase of damaged and useless lives must, Lord Kilmaine concluded, be prevented somehow, both for the sake of the race as a whole, and for the sake of the individuals themselves

The Bishop of NORWICH said he would have liked to associate himself with the proposal, but he did not think it was possible to draw a parallel between the breeding of the human race and the breeding of stock. Marriage was not the only door to procreation, and he was afraid there were many who, failing to receive any of the certificates suggested, would still not be restricted from forming alliances from which children might result The certificates themselves involved great difficulty There were many gradations in the want of complete mental power, and at the present time our knowledge of these disorders and our equipment for dealing with them in private and public ways were limited Many mental disorders were intermittent in their effect They might find someone perfectly clear mentally in himself or herself, and yet he or she might carry a taint into a further generation He could see extreme difficulty in disqualifying for marriage people who had shown no sign of disorder, simply because some other generation behind them had shown signs of mental disaffection, and yet these people might be the very ones who could not be safely trusted to rear families At the same time they needed a ripe opinion on all these questions of eugenics The birth rate among undesirable stocks proceeded more rapidly than among the more promising stocks of the community. It was a national menace, but he did not think isolated action of this sort would be any good

The ARCHBISHOP OF CANTERBURY asked what was the nature of the fitness into which inquiries were to be made? Was it merely for the production of children, or for reasons of health and nerve, and the like? But, most of all, who was to certify? If every married couple was obliged to produce a medical certificate, was it to be some State official before whom they were to go? Were they to pay a small fee for an investigation by some State official as if they were to be "vetted" like horses? How was the private practitioner to take the responsibility, except in the case of a clear-cut "All is well"—the Certificate "A," or the quite definite Certificate "D," involving prohibition? The intermediate certificates would place an onus upon a private medical practitioner which required a great deal more thinking out before they could agree to it. Again, what was the unfortunate minister of religion to do if a couple brought Certificate "B"? It would put the minister and the civil authority, in a quite impossible position There would be he supposed, some time a full discussion on the recent report on sterilisation and kindred subjects That wanted the most careful consideration

THE GOVERNMENT'S REPLY

Viscount GAGE said there was at least strong evidence of the desirability of limiting the right of marriage in regard to one class of person—the mentally defective. A recent committee on the sterilisation of mental defectives dealt with the matter from a somewhat different angle But the evidence of that report had interest as showing the extraordinary volume of suffering and misery that so often afflicted the children of defective parents. With the legal marriage of mental defectives that committee did not deal, but the Board of Control had on several occasions recommended in strong terms that the marriage of mental defectives under order should be prohibited by law At present the position, so far as he could ascertain, was that when they were in institutions they were incapable of marriage. For mental defectives under guardianship the consent of the guardian was required, but, as with minors, if a defective managed to get married by evading the guardian's consent, then the marriage was valid. The report stated .

> ". . our Board have in previous reports strongly recommended that the marriage of defectives under order should be prohibited by law. We realise that the proportion of defectives under order is so small that such a prohibition would only touch the fringe of the problem , but we believe that the statutory prohibition of marriage in these cases would have a value far beyond the actual number of cases to which it would apply, because of its effect in bringing home to the public conscience the unwisdom of countenancing unions the results of which are, from every point of view, nothing less than disastrous "

The departmental committee had recommended a form of voluntary sterilisation, but they were clearly of opinion that any hint of institutions being associated with compulsory sterilisation would lead to the concealment of defect. The loss or the qualification of the rights of marriage was a less severe step than sterilisation, but investigation of this kind would still have the tendency to drive underground facts which ought to be brought to the notice of the medical profession as soon as any suspicion was aroused. To some people of nervous temperament the dread of a medical examination would be a severe deterrent to a legalised marriage and might, in fact, tend to increase the number of illegitimate births. The Ministry of Health felt there was sufficient evidence, from experience extending over years, to justify them in testing public opinion in regard to the reports of the Board of Control and the committee on sterilisation The latter had been circulated and was being considered at present by large numbers of interested institutions and bodies Beyond that the Ministry could not go There were undeniable evils in the present situation, some of which might be prevented, but it was necessary to carry the public with them at every step

The motion was by leave withdrawn.

Opening of New Session: The King's Speech

The fourth session of the present Parliament was opened by the King in the House of Lords on Nov. 26th. In the course of his gracious speech from the Throne, His Majesty said that the report of the Joint Committee of both Houses on Indian Constitutional Reform was about to be presented, and it would be the duty of his ministers to lay before Parliament their legislative proposals for the future government of India. Although factors adverse to the full resumption of international trade still existed, it was His Majesty's earnest hope that the coming year would be marked by a continuance of the spirit of confidence and enterprise which had enabled this country to take the lead in world recovery.

The Government, in conjunction with the local authorities, were pressing forward with the task of clearing the slums, in regard to which the national conscience had been so deeply stirred So great a measure of progress was being attained that the Government were able to contemplate the next step in the process of improving the housing conditions of the people. A Bill would accordingly be submitted for preventing overcrowding and making provision for the rehousing of those found living in overcrowded conditions. A similar Bill applying to Scotland would also be introduced. A measure would also be introduced to assist certain areas in which prolonged unemployment had created problems of an exceptional character. If time permitted measures would be introduced for the control of building development along the main thoroughfares, for providing for better housing for the metropolitan police, and other subjects

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HOUSE OF COMMONS

WEDNESDAY, NOV. 14TH

Insured Persons and Pension Rights

Mr. BUCHANAN asked the Minister of Health whether he would consider the introduction of legislation to amend the National Health Insurance Act of 1932, so as to extend the pension rights of unemployed people which otherwise would lapse at the end of 1935; and, if not, what steps he intended to take in the matter —Sir HILTON YOUNG replied . I am not in a position at present to make any statement on this matter I would, however, remind the hon Member that I announced in the course of the debate on the second reading of the Bill of 1932 that the whole position would be reviewed when the first report of the Government Actuary on the financial operation of the Contributory Pensions Acts is received. I hope that that report will be available early in 1935

Cost of Glasgow Institutions

Mr McGOVERN asked the Secretary of State for Scotland the weekly cost per head for every hospital, poorhouse, asylum, and sanatorium patient or inmate under the control of the Glasgow Corporation —Sir G COLLINS replied I regret that no figures are available for sanatoria, infectious diseases hospitals, and mental defective hospitals As regards other institutions the following statement gives the institution and average weekly cost for the year ended May 15th, 1934

	s	d		s	d
Barnhill Poorhouse	17	2	Dunclutha Home, Kirn	42	0¾
Crookston Home	23	10¾	"Girls' Training School," Dunoon .	17	1½
Southern General Hosp	24	4½	Gartloch Asylum	25	0
Eastern District Hosp	37	5¼	Woodilee Asylum .	22	4
Western District Hosp	42	6½	Govan Asylum	24	1
Stobhill Hospital	35	10			

THURSDAY, NOV 15TH

Asbestosis

Mr THORNE asked the Home Secretary the number of deaths from asbestosis, whether he had any statistics that showed how long was the period between contracting the disease and death, if he was satisfied that every precaution was taken to keep this disease in check, and whether he would take steps to have the regulations enforced in all parts of the factories, including the warehouses —Sir JOHN GILMOUR replied · About 60 deaths have been brought to the notice of the Department, and after investigation are all attributed by the Senior Medical Inspector of Factories to exposure incurred previous to the Asbestos Industry Regulations of 1931, which require elaborate precautions The disease usually takes years to develop, and the period between commencement and death varies very widely. Special inquiry in 1932 as to the risks in warehouse and certain other processes revealed no need for any extension of the regulations, but their effectiveness will continue to be closely watched

Woman's Death in Manchester

Mr LANSBURY asked the Minister of Health if he had any statement to make as to the publication of the report of the inquiry into the death of Mrs Taylor —Sir HILTON YOUNG replied: I have come to the conclusion that the circumstances of this case are so special as to justify an exception to the established rule against publication, I am so informing the City Council of Manchester, at whose request I caused the inquiry to be made, and the authorities of St Mary's Hospitals, who concurred in the request

Supply of Milk and Food to Children

Miss RATHBONE asked the Parliamentary Secretary to the Board of Education whether he would consider withdrawing the restriction placed by Circular 1437 upon the freedom of local authorities to give milk or meals free to children on account of their parent's poverty without first requiring a medical inspection, in view of the dissatisfaction it had aroused and of the acknowledged difficulty of detecting the early signs of malnutrition —Mr RAMSBOTHAM replied My noble friend is not prepared to withdraw the Circular He is satisfied that medical selection on the lines indicated in the Circular affords the best means of securing that these children who need food or milk in fact get it, and that under any system other than that of medical selection there is a danger of overlooking children who require attention He attaches the highest importance to a close study of defective nutrition and its treatment, and he regards it as in every way advantageous that this part of the work of the school medical service should be closely linked with the arrangements for the provision of meals and milk

Miss RATHBONE Is the hon Member aware that the organ of the local education authorities has condemned this restriction on their freedom, and are not local authorities the best judges of what should be done in this matter ?

Mr RHYS DAVIES Is it not much better to prevent children becoming ill rather than to deal with them after they are ill ?

Mr RAMSBOTHAM I think that the system of medical inspection is much the best way of doing that

Miss RATHBONE Is not a cost for inspection of 7*s* per child a large expenditure for the purpose of determining whether a child shall receive 2½*d* worth of milk ?

Mr PALING As the cost of medical inspection is so high, would it not be better to spend the money in giving milk to the children ?

Maternity and Child Welfare Services

Miss CAZALET asked the Minister of Health what steps he was taking in areas where there had been a reduction of the amount spent on the maternity and child welfare services, in view of the fact that an additional amount of [illegible],000,000 was included in the general Exchequer contribution for each year in the first fixed grant period under the Local Government Act, 1929, to be used for the development of local services, including the development of the maternity and child welfare services —Sir HILTON YOUNG replied : In any case where there has been such a reduction the first step is to ascertain the reasons for and the effect of the reduction If there is reason to fear a reduction in the efficiency of the services I direct a local investigation and make the necessary representations to the local authority The expenditure of the grant mentioned by my hon friend is within the discretion of the local authorities, but it is a condition of grant that they shall maintain a reasonable standard of efficiency and progress in the discharge of their public health functions The policy of the Government is to secure a development of the maternity and child welfare services, and steps have recently again been taken for that purpose On other occasions opportunity has been taken to emphasise the claims of these services on the additional grant referred to

Death from Vaccination

Mr GROVES asked the Minister of Health whether his attention had been called to the death of a nurse at [illegible] from vaccination ; whether he was aware that the operation was imposed by a Sheffield institution as a condition of employment ; and whether, in view of such risks he would advise the authorities of hospitals and similar institutions not to insist on the vaccination of their staffs.—Sir HILTON YOUNG replied : The answer to the first two parts of the question is in the affirmative As regards the third part, I would refer the hon Member to the reply which I gave to a question which he asked on July 26th relating to the case of Leonard George [illegible] the opinion has already been expressed in circulars issued by my Department that it is not generally expedient to press for the vaccination of children [illegible] of age or of adolescents who have not previously been vaccinated unless they have been in personal contact with a case of small pox or directly exposed to small pox infection" (THE LANCET August 4th, 1934 p [illegible]) I may also refer to the remarks on this subject which are contained in the annual report of the Chief Medical Officer of my Department for 1933

PUBLIC HEALTH CONGRESS AND EXHIBITION

THIS Congress was opened at the Royal Agricultural Hall, Islington, on Monday last under royal patronage and the presidency of Sir EDWARD HILTON YOUNG, Minister of Health Sir FREDERICK J WILLIS, Chairman of the Congress Council, presided at the opening function, and the Minister opened the proceedings with a brief address, in the course of which he said that he was pleased that the subject of maternity and child welfare would come up for consideration in the conferences, as the Ministry proposed to hold special inquiries directed to abnormal local death rates He also invited the local authorities to take a material interest in methods of health exercise and physical culture

In the afternoon Sir ARTHUR ROBINSON, Secretary to the Ministry of Health, took the chair when an address was delivered by Sir GEORGE BUCHANAN, President of the Office International d'Hygiène Publique, on the international arrangements for preventing the spread of epidemic diseases

Sir George Buchanan invited the audience to inquire with him into the progress made by international methods in post war years, pointing out the increased coöperation with fellow workers now taking place on almost every technical subject in foreign countries and in our own dominions This cosmopolitan tradition, he said, was represented during the war by the activities of Red Cross in terms of curative treatment, while the tradition had always been strong in medicine and public health He instanced, as an example of its working, the International Congress at Zurich on radiotherapy held this summer, when physicists, radiologists, physicians, and surgeons from all parts of the earth made contacts, while the magnitude of the cause they were engaged on put into the background of their thoughts the political happenings in Austria and Germany between July 20th and August 3rd Radiotherapeutic work was being done in a few institutes scattered all over the world, and the Zurich Congress had not met for a *combat of views* between their representatives, but to learn from them of their activities and to secure that proper reports should be forthcoming of successes and failures He spoke of other international congresses on health held in different countries during the past year as exceeding a hundred in number and as showing that to day in almost any expert work international consultation is seen to be required In some countries such as Soviet Russia every medical and public health activity, he mentioned, was State directed, and he quoted from the Covenant of the League the significant words that members of the League "will endeavour to take steps in matters of international concern *for the* prevention and control of disease," and indicated the way in which the Assembly of the League had discharged this responsibility The health organisation at Geneva had resulted, he stated, in meetings of experts on such subjects as malaria leprosy and sleeping sickness, in interchange visits, and in conferences on cancer statistics on international standards, and on the definitions to be adopted for serums vaccines, and vitamins

Concerning all such work it had to be remembered that the organisers enjoyed the advantage of occupying new ground but international measures for the control of the introduction of infectious diseases were in a different position Schemes to this end had been the subject of international or diplomatic intervention since the Middle Ages, and so strong was tradition that it was difficult to change methods which had fallen out of date in the presence of modern ideas of knowledge and sources of intercommunication With regard to sanitary organisations for the defence of frontiers and quarantine services at ports, the reason is lost for apprehension of widespread epidemics; pre-war international sanitary conventions had played here a useful part, but they dealt with elaborate defence systems, while new methods of international coöperation were required to be directed against the diseases themselves And he instanced, as a good example of the change over that was displayed the regulations with regard to plague-infected rats where rules for international sanitation concerned the actual plague infection on the ship, but where the root of the trouble—namely, the ship-rat itself—is also dealt with Noting that the same principle had been applied in different ways to other diseases, he considered at some length the question of the *importation* of small-pox. In our country two different types were distinguished, variola minor and variola major under the name of small-pox Variola major, epidemic and persistent in the East, when imported into England will breed true, but by meeting such cases before they got a hold on the local population through isolation, surveillance of contacts, and vaccination, tragedies could be averted Variola minor he described as practically an English disease, stopping with the first rash and attended by no pustulation or pitting, and having an almost negligible mortality. These cases had to be termed small-pox, and their existence gave to foreign countries, which had no experience of variola minor, the impression that in this country small-pox, as they understood the disease, was epidemic

Concerning the possibility of importation of infectious disease by aircraft, the speaker said that with any sort of vision we must appreciate that travel by air was increasing, and although the total number of passengers must be but a small fraction of the whole, there was, he said, already proof that this fraction could carry infections—for example, travellers from a non-malarious country could contract malaria in the course of an ordinary journey from the bites of infected mosquitoes. He pointed to the absurdity of old-fashioned quarantine regulations in this situation and said. "If the notion of putting passengers by sea and the ships they go in under special observation for no other reason than that the ship has touched at a seaport labelled as infected is now out of date and usually futile, how much more futile is it when applied to airports? . . . The International Sanitary Convention for Aerial Navigation had now hammered out an international code of conduct—on the one hand something practical and reasonable from the side of air traffic, and on the other something which, when it had to be applied, would offer a substantial security without illusory formalities" Sir George pointed to two key positions, generally relied upon in the detention of arrivals in an infectious state The first was that the airports open to arrivals should be few, and that at them the recent movements of particular persons, coming from distant countries and exposed to particular infections, should be subject to interrogations which would secure over them the surveillance that would be imposed if they had arrived at a seaport The second was the establishment of an international intelligence system

Local authorities and public health officers sometimes could help the work materially. There is much take as well as give The gain as regards our escap from infectious disease in consequence of the international coöperation could not be assessed in figures but Sir George concluded by claiming that "th extreme rarity of these importations, notwithstanding modern facilities of communications, wher contrasted with the experiences of the end o the last century and the pre-war period, in which we relied almost wholly on our own 'defence measures, are some testimony to the value of the willing international coöperation I have outlined I would insist on its willingness; in my experienc the best work has been done by avoiding any semblance of international expert dictation, any suggestion of international inspection, or any interference with national administration It has been achieved by working steadily for conferences and agreements between responsible health officer throughout the world, determined to help one anothe to carry out their respective national duties"

Team Work for Maternity

On Tuesday a discussion on antenatal and postnatal care was held under the auspices of the Association of Maternity and Child Welfare Centres, Dr Charles Porter (M O H, St Marylebone) presiding

Prof F. J BROWNE (director, Obstetric Unit University College Hospital) pointed out that almos every disease to which women are liable may b associated with pregnancy, so that antenatal car not only implies supervision of the expectant mothe by a competent obstetrician, but also cooperatio by him with the gynæcologist, the radiologist, th bacteriologist, and others. The man in the stree endows every physician with superhuman power but most doctors are humble enough to admit tha they cannot hope to be adept in more than on department, and that if the patient is to have th best chance, association with colleagues who hav specialised in other branches of medicine is necessar One lamentable example of lack of coöperation whic seriously handicaps medical officers of municip antenatal clinics is the gap between diagnosis an treatment Medical officers at the clinics are no allowed to give treatment, the patient must b referred to her own doctor, who is often too indifferen or too much occupied to give her the treatment sh needs. The time has come, Prof Browne said, t bridge this gap by taking midwifery out of the hand of general practitioners altogether, and establishin a service of specialists thoroughly trained in obstetrics, to work in coöperation with highly traine nurse-midwives, this team being responsible for th care of the patient during pregnancy and deliver The general practitioner is unsuited for midwifer work for the following reasons (1) the practice o midwifery calls for a long specialised training whic it is impossible to give to the undergraduate medica student Nothing less than three years' postgraduate practice in a large maternity hospital i sufficient to acquire the necessary skill (2) In th course of his work the general practitioner is continually in contact with septic wounds, and he may have to go direct from such a case to a midwifer case, with grave risk of infecting his patient (3) Midwifery practice is incompatible with the claims o general practice It occurs at irregular times and interrupts the doctor's ordinary work, entailing dangerous haste Our failures in antenatal care and our high maternal death-rate will only be overcome by a specialist service in which team work will replace the chaos and confusion which at present characterise the midwifery service of this country.

ADDRESSES AND ORIGINAL ARTICLES

A LANDMARK IN MODERN NEUROLOGY*

By Wilfred Trotter, M S, F R S
SURGEON, UNIVERSITY COLLEGE HOSPITAL

I

There is perhaps no custom which we accept as a matter of course more readily than the ceremonial commemoration of past events The facility with which exercises of this kind are set going indeed suggests the suspicion that they are animated by motives both numerous and mixed, and we may well remember in confirmation the strange and even scandalous allegations of psychology about the things that lie behind our most ordinary conduct Happily it is neither my task nor my wish to touch on such obscurities, or to try to sound the molten subterraneous magma on which the continents of virtuous behaviour so blandly float Even the suspicion however that motives may not always be as they seem lays upon us the duty to define quite clearly what we propose should be our attitude of mind in approaching an occasion such as this If we succeed we shall moreover obtain the secondary advantage of some security against the lapses of proportion and of emphasis, which the spirit of celebration may be a little inclined to indulge

I yield to the temptation that besets the maker of definitions, and begin with some of the elements the commemorative impulse should control or reject In the first place we do well to deny ourselves any strong tincture of that antiquarian spirit which delights to note in the doings of our forebears, the qualities of the merely old world and quaint In the second place we shall do well to use a reasonable proportion and measure on our laudation of departed greatness. The pious exercise of praising famous men is no doubt a highly respectable if rather sedentary occupation I would not be supposed to deprecate it, but I venture the reminders that praise in its higher flights is apt to get at odds with understanding and that even the truthful Samuel Johnson did not require a man to be on his oath in an epitaph These reserves are no longer necessary when we direct our commemorative zeal towards the pursuit of reality The vividness and the immediacy of contemporary events are apt to conceal from us how little of their full quality and outline we are able to discern It is only the past event that can be seen as part of the pattern of things and with an approach to substantial reality On an occasion such as this, then we shall best serve our object if we take advantage of the distance of the event, to examine it in its general relations and the light of its secular context, and throughout in the spirit of a strict realism

II

We are to recall a surgical operation that was done at the Hospital for Epilepsy and Paralysis on the 25th of November 1884—fifty years ago and well within the reach of living memory The insidious action of memory must not however be allowed to obscure the fact that in going back to that time it leaps a gulf between us and another age We shall not get a proportioned view of our event unless we pause a moment to call up the world in which it took place In 1884 we find ourselves in the richest depths of the Victorian era, and the warm tranquil air of its impenetrable security closes round us The stability and permanence of the scene are embodied in the everlastingness of the three world figures which dominate it—Queen Victoria, Gladstone, Bismarck—figures which seemed so extravagantly different then but which disclose a certain similarity to-day An ultimate and real security enclosed the body and spirit The land belonged to its monarchs, the seas belonged to England, and the firmament was unconquered though perhaps still a little vaguely claimed by the Church In science the air was as yet unadulterated with inert gases, and matter still sat contentedly in its little hard globular and indestructible atoms The British Empire was still without self consciousness and without a voice, though a couple of years later it was to find both as the whole epoch swung to its zenith in the Jubilee of 1887 Ten years still further on the Jubilee of 1897 would find the voice of Empire already a little strident and uneasy, the light perceptibly that of evening and the shadows lying long on the ground But the golden decade of the eighties seems in memory bathed in the timeless light of summer afternoons into whose tranquility no storm could conceivably break

This is not to say that there were no occasional rumblings on the horizon which seemed to indicate that someday the weather might change While the group of doctors to whose doings we are presently to come had done their operation, and were watching their patient with declining hopes through anxious weeks, General Gordon hopelessly shut up in Khartoum, was watching the approach of a doom as inevitable as that of the sick man, whom he was only just to outlive.

III

So much for the general context in which the event we are to celebrate had its course Its special context will concern us more when we have recalled the event itself The story of the case has been re told quite lately by Sir D'Arcy Power in the vivid way we all know, and I therefore need provide no more than a curt summary of the facts in the modern rather than the contemporary idiom The patient was a man of 25 with no other evidence of abnormality than his cerebral symptoms For three years he had shown slowly progressive evidence of a lesion in or near the central cortex of the right hemisphere The succession of symptoms shewed typical Jacksonian attacks with occasional loss of consciousness The limited attacks were first in the left side of the face and tongue and then in the left hand and arm For about six months there had been weakness of the left arm and for three months before the time of admission to the hospital on November 3rd the patient had had to give up work because the left arm was useless From the time of admission there had been slight weakness of the left leg and severe pressure symptoms had set in namely intense paroxysmal headache and vomiting and well marked papilloedema with haemorrhages The diagnosis was made of a tumour "probably of limited size involving the cortex of the brain and situated at the middle part of the fissure of Rolando" This conclusion was put before the patient who was intelligent enough to understand, and brave enough to accept the course proposed by the doctors On November 25th the tumour was found and removed by operation through an opening immediately over and but little larger than the tumour itself Only one cerebral convolution was exposed—the ascending parietal as was afterwards proved—it was slightly yellow and relatively avascular. When it was incised a tumour was disclosed at the depth of ⅛ inch This shewed an apparent encapsulation but was enucleated piecemeal and subsequently described as a glioma.

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* An address delivered at the house of the Royal Society of Medicine on Nov. 27th in commemoration of Sir Rickman Godlee's operation performed at the Hospital for Epilepsy and Paralysis on Nov 25th 1884

The immediate effect of the operation was wholly satisfactory There was a slight increase of the hemiplegic weakness but all the other symptoms were relieved and the intelligence was fully retained. It had been proved for the first time that without the least external abnormality of the skull to point the way, a focal lesion of the brain substance could be found and could be removed by operation leaving the general functions of the brain unimpaired.

Complete success, success such as would have been palpable even to the "world's coarse thumb and finger," was denied these valiant men. A slow infection of the wound occurred and after four miserable weeks of disappointed hopes, the patient died of meningitis It would be beyond the limits of my task to comment on this operation from the point of view of the modern surgery of the brain of which it is one of the corner stones The remark may however be made that if these pioneers were unfortunate in their efforts to exclude infection, they were fortunate in having as their first case one in which the neurological and anatomical localisation of the lesion could be made so brilliantly exact.

IV

There were present among others at the operation, Hughes Bennett and Godlee the physician and surgeon directly concerned, and Ferrier and Hughlings Jackson without whose work it would never have been thought of. I do not propose at the moment to say anything more of the two last named. Of Alexander Hughes Bennett I will limit myself to saying that he seems to have been the competent and respectable son of a distinguished father, John Hughes Bennett of Edinburgh The elder Hughes Bennett, as I cheerfully discard relevance to remind you, introduced the use of cod liver oil to this country, and tried to persuade the profession to cure rickets 80 years before the discovery of vitamin D. He met with even less success than did James Lind who tried to persuade the profession to prevent scurvy 150 years before the discovery of vitamin C

Of Rickman John Godlee the occasion seems to demand an ampler memorial and personal knowledge perhaps to justify the attempt. At the time of the operation we have described, he was in his early prime and had been on the staff of University College Hospital for seven years He was to serve the Hospital for 30 years more with a characteristically punctual assiduity, and a loyalty and judgment that made him one of its mainstays It is the healthy tradition of the students of that Institution to view their seniors with an unsentimental and not too indulgent eye I cannot express respect for the memory of Godlee better than by saying that all the influence of his early training and mature judgment, would have approved the attempt to recall him under the guidance of that traditional method, and to see him as he was He certainly saw us as we were and did not always conceal the result of his observations His precise patient and extraordinarily lucid teaching was invaluable, not only for its excellence but also for the conscientious regularity with which it was dispensed, even in his busiest years He was never harsh but his confidence was difficult to win, and he was an exacting chief who enforced his instructions with a chilly mildness that had its power I can speak only for one of his pupils, but it took that one a long time to guess at the sensitiveness and personal humility, which he defended from the world with a tongue always clever and sometimes a little cruel

It is scarcely possible to estimate the quality of Godlee as a surgeon without some glance at the men who were his nearest contemporaries on the staff at University College—Arthur Barker his senior by one year, and Horsley his junior by seven years † Each of these two men had the restless curiosity and discontent of the pioneer, each had a strong natural aptitude for operative work, and each in his own field was capable of the highest flights of technical virtuosity It was natural therefore that their interests should tend to be concentrated on special problems, while the rest of surgery was taken very much for granted as common knowledge, though Horsley in particular when he chose to use it had an extraordinary flair for all clinical matters Godlee on the other hand was a true and single-minded clinician, for whom the task of the surgeon was to teach and to practise the established doctrines and rules of the art His attitude to surgery was therefore in the best sense academic and authoritarian, and his work, well controlled by caution and scepticism, had the distinction conferred by a capacious and instructed mind.

It may well seem rather paradoxical that we find a man of this type, engaged in the daring adventure that an attack on a cerebral tumour must then have seemed, and I have no doubt that Godlee approached it with at least all the qualms that any conscientious surgeon must have felt He would be sustained, however by the knowledge that he possessed two very special qualifications In the first place as the nephew of Lister he could feel able to apply the new antiseptic doctrine in all its purity and might also feel an almost apostolic mission to demonstrate its value in the unknown region of the brain. In the second place the knowledge that he was a highly competent anatomist must have encouraged him to undertake the difficult task of finding his way to a given convolution guided only by anatomical measurements It is pleasant to think with what relief and pride the young, conscientious and perhaps not very self-confident surgeon, must have concluded an operation that had so brilliantly justified every expectation, and so generously rewarded every effort

No such happy concatenation of circumstances seems to have befallen Godlee again, and throughout his long and extremely distinguished career whatever satisfactions and triumphs he was to enjoy, he was not to experience any more just that special exultation of leading the forlorn hope

V

In mentioning those who were present on this historic occasion I have said nothing about someone else whose presence even the least sentimental of us must admit to have been indispensable One's professional mind, perhaps wisely, would prefer to conceal under the comprehensive label of "the case," the fact that this person was a human being, and would also prefer to limit any concession of individuality to such remarks as that he was of a good type and that he took the anæsthetic well With an equally prudent preference for the abstract, the general speaks of his men as "the troops," and recognises in them such distant approaches to humanity as that they are smart on parade, or steady under fire

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† This group of remarkable men must always be further linked in the memory of the surgical neurologist by the facts that in 1886 Barker was the first in this country to drain successfully an otitic cerebral abscess, and that in 1887 Horsley was the first to remove an accurately localised spinal tumour The latter achievement was perhaps the least known but not the least substantial contribution to the celebrity of the year that marked the Jubilee of the Queen by whose express wish Horsley had received his first name

The heresy of admitting that at the centre of this event there was a human being is possibly condoned by his short appearance before us not being without a certain tragic dignity He was young intelligent, courageous and he was to die I owe to the impeccable memory of a contemporary witness the knowledge that this young man's name was Henderson and that he was a native of Dumfries I record this with pious satisfaction in being able to add a name to the exiguous roll of those by whose misfortune or endurance the world has directly gained It is a strange defect in medical history to have kept so few of the names of these benefactors and to have left it to accident that we still know there existed such humble but significant people as little James Phipps and Sarah Nelmes or Alexis St Martin To the high professional spirit treasuring such names may seem trivial and even a little ludicrous Let us not forget however that they are the names of those who have borne more substantial witness than has yet been produced by any philosopher or any theologian that all suffering is not in vain

VI

We have tried so far to make some sort of picture of our event in three ways First we have touched on the general environment in which it took place, secondly we have enumerated some of the happenings of which it was made up, and thirdly we have given some attention to the actors who took part in it It remains to add to the bare outlines of our necessarily imperfect specification some comment on the significance, or what I have called the special context, of the event itself The first operative removal of a localised cerebral tumour was what we may call a nodal occurrence that marked the convergence of two distinct processes, the evolution of operative surgery on the one hand and of neurology on the other

The development of the remedial use of the knife seems always to have occurred in two stages In the first discovery was made that a procedure was anatomically and physiologically feasible and it was applied to what pathological conditions might be hoped to be benefited by it The essential fact was that the operation could be done at all, and not that it was designed to deal with a given lesion Thus may have originated most of the classical formal operations—the amputations, the excisions of the tongue and of the jaws which were in essence anatomically conditioned, and without primary orientation towards any disease

When the anatomical and physiological obstacles to the art have been overcome, and are no longer the surgeon's chief care, it is possible for operations to be dictated specifically towards dealing with a given lesion and to be designed chiefly in accordance with pathological considerations Thus we no longer amputate the tongue or excise the jaw or larynx for cancer, we excise the cancer from these regions Hence the full development of the operative surgery of a part is strictly dependent on its pathology which is always growing in accordance with this simple principle the evolution of surgery as a whole was retarded and at last almost arrested by the inability to prevent wound infection In the pre-Listerian ages wound infections were scarcely serious enough to be in themselves a drag on the progress of surgery, so long as the population was thin and scattered. Increase of population and of urbanisation went on with progressive rapidity throughout the 18th and 19th centuries, making unavoidable the aggregation of the sick in hospitals The inevitable result was that by the middle of the latter period, it began to seem doubtful if wound infections would not bring hospital surgery, and with it surgical progress, to a stand still The result was a highly anomalous situation, in which surgical pathology had got far ahead of surgical treatment Many conditions were well enough understood pathologically for their treatment to be clear, the anatomical and physiological obstacles to the necessary operation were understood and surmountable, but treatment was impossibly dangerous through the irrelevant factor of wound infections The Listerian system quickly abolished this anomaly, and there was an immediate harvest of success in conditions of which the pathology was at all reasonably advanced Where however surgical pathology had been able to make little or no substantial progress, then the antiseptic method could gain no immediate results Progress therefore resumed its normal type though it was doubtless accelerated by the increased freedom to explore and observe that the surgeon now possessed Thus though Wölfler did the first gastroenterostomy in 1881 and Koch discovered the tubercle bacillus in 1882, it was near the end of the century before abdominal surgery had fairly assumed its modern aspect, and after the turn of the century before the modern surgery of the thorax began to take form

The tedium of this digression is justified here, if at all, by the salience it may give to the unique evolution the surgery of the brain has had It was the good fortune of this branch of the art that at approximately the time when the antiseptic method enlarged, if not indeed created its opportunities, really fundamental discoveries in the physiology and pathology of the brain were being made, so that there was no tendency for operative inventiveness to outrun its pathological foundations Progress has been slow through the comparative rarity of its material and the stubborn difficulty that is its everyday characteristic That slow progress has however been steady, and unproductive of the kind of operation, known sometimes in other branches that flourishes exceedingly and then dies because it has no sound pathological basis

VII

I have referred to the fundamental discoveries in neurology that did so much to start the surgery of the brain on its course They will for ever be associated with the work of two men whom we have noted to be present at Godlee's operation—Ferrier and Hughlings Jackson With some slight reference to that work my task draws to its end.

Whenever we may suppose the idea of a localisation of function in the cerebral cortex to have originated, it began to get systematic exploitation with Broca's discovery in 1861, of a relation between aphasia and lesions of the third left frontal convolution From that time research followed the two lines of clinical enquiry and animal experimentation In the clinical field Jackson soon established the position of a master and within a few years had begun the long series of contributions which are among the most precious classics of neurology The experimental attack began with Fritsch and Hitzig in 1870 who demonstrated the electrical excitability of the anterior part of the cerebrum. Then Ferrier took up the task and in 1873 published a long and detailed paper which carried the subject much further forward and confirmed in a remarkable way the clinical work of Jackson. The impetus given to the subject by Ferrier was very great, and it was pursued with increasing minuteness and exactitude by physiologist after physiologist. At the time of Godlee's operation, for example, Horsley had already been engaged for nearly a year with Sharpey Schafer at University College on their well-known work on the monkey's brain. These bare references are enough to recall the atmosphere of vigorous neurological expansion of the period with which we are concerned. In some ways also they perhaps make it seem more remote. I cannot deny myself a reminder that tends against this last impression. Ferrier's classical paper was published in the Medical Report of the West Riding Lunatic Asylum for 1873. I almost feel I should digress to apologise for the crudeness of the name which the then backward state of psychiatry allowed this institution to possess; I wish I could have called it a Mental Hospital, though perhaps the experimental physiology would not have been any better. In this paper, then, Ferrier expresses his thanks to the Medical Director for putting at his disposal the liberal resources of the laboratory in which he had done his work. Sixty-one years later I find myself able in one thing to follow in the footsteps of Ferrier, and that is in expressing my thanks (for help in recording the event we commemorate to-day) to the same distinguished physician Sir James Crichton Browne.‡

We have been engaged in recalling one of the victories of the human spirit over chaos. As we take leave of the battlefield we may note that like other famous victories its results have not altogether been the expected. It was fought in the strength of three great principles—the antiseptic system with all its chemical lotions and its sprays, the precise projection of the cerebral markings on the surface of the skull as a preliminary to operation, and the doctrine of the exact localisation of cortical function. The first two have long been abandoned by the surgeon and I should be sorry to have to define the present position of the third. Nevertheless each has left a substantial legacy of which the invigorating influence in surgical neurology remains perennial. Thus though we might hesitate to fight a similar battle to-day under the guidance of these time-worn champions, we can yet believe that the event they directed was a real event, and one worthy of our respectful commemoration.

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‡ Sir James Crichton Browne has been good enough to inform me that though not actually present at Godlee's operation he was acquainted with the case both before and after and was well qualified through his familiarity with the patient's native place to test his memory after the operation. Sir James was the author of the well-known letter in "The Times" signed "F.R.S." which pointed out the direct dependence of the operation on the results of animal experiment, and which led to some controversy and also to two valuable leading articles in that journal.

Site for Block of Paying Beds.—A site has been secured for the erection of a block of paying beds for the Nottingham General Hospital through the gift of £25,000 from Mr. J. D. Player. His gift is conditional upon the hospital raising by subscription the balance required.

New Hospital at East Grinstead.—The building of this hospital, which will contain 12 beds for male, 12 beds for female patients, 6 cots for children and 6 pay beds, has now been started. It is to cost over £23,000, and it is hoped that it may be opened next October. A balance of £6339 has still to be raised if the hospital is to start clear of debt.

ONE HUNDRED HISTAMINE TEST-MEALS ON NORMAL STUDENTS

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A great deal has been written in recent years on the use of histamine stimulation for the study of gastric secretion, and no arguments need be given here for the advantages of this method of obtaining gastric juice over the older forms of test-meals. Whilst much is now known about the results of this test in pernicious anæmia, fevers, peptic ulcer, pregnancy, and various other states, no investigation has as yet been carried out on a large series of normal subjects. The nearest approach to such a work has been Polland's analysis of 988 cases, many of which were found to be free from any lesion of the gastro-intestinal canal or "significant disease." The objection to taking Polland's series as a criterion of the normal is that the subjects all presented themselves at a hospital for *some complaint, no matter how trivial, and in the* present state of our knowledge we are unable to say what conditions influence gastric secretion.

Medical students were chosen as the subjects of the present investigation because they formed the largest body of healthy adults to which we had access and also because they were likely to fall within a fairly close age limit.

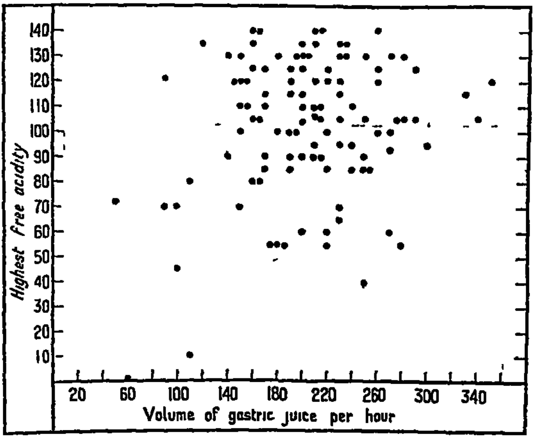
The ages of the subjects varied between 18 and 2 years except for three subjects who were 32 years old. A total of 108 students were subjected to the test, and of these 8 gave a history of abdominal pain. Several of them had been radiographed and no lesion of the stomach or duodenum had been found, but these 8 cases will be considered separately. Careful histories were taken in each case, especial note being taken of past history of gastro-intestinal disturbance and of abdominal operations. The family histories were investigated in each case and note made of the occurrence of indigestion or peptic ulcerations in the families.

METHOD OF INVESTIGATION

The technique was similar to that of Bloomfield and Polland,[2] but certain points were altered as a matter of convenience.

The time of test was either 9 A.M. or 2 P.M., in the latter case a light breakfast being allowed at 8 A.M. A Ryle's tube was passed, the resting juice was removed, and the stomach then washed with several syringefuls of warm water until the rinsing fluid was returned clear. We feel that this is desirable, not only as lavage, but also to ensure that the tube rests in the most dependent part of the stomach. The blood pressure was taken as a routine, and if the systolic blood pressure was below 110 the usual dose of 0.75 mg. of histamine hypodermically was reduced to 0.5 mg. (8 cases). The average weight of 87 of the students was 66.0 kg., so that this dosage corresponds fairly closely to that recommended by Bloomfield and Polland (0.1 mg. per 10 kg.). In view of the relatively slight differences found by Englebach and Brown[3] between the effects of 0.75 and 0.5 mg. any small difference in dosage is probably unimportant. The eight cases who had 0.5 mg. covered a wide range of acidity, and did not differ significantly from the whole series.

The stomach was then emptied as completely as possible every ten minutes, a stop-watch or a large *ordinary* watch being used for timing About the last three minutes of each period were devoted to aspiration Although as a rule no difficulty was experienced with this, it is a procedure which requires some practice, and occasionally it became obvious that complete emptying had not been obtained, for example, if successive specimens consisted of 5 and 50 c cm A special effort was made to ensure emptying at 10 and 50 minutes, and the juice secreted during this period was taken as an index of the volume instead of the highest ten minute volume recommended by Bloomfield and Polland In this way errors of volume estimation are reduced to one quarter We prefer this procedure to that of Comfort and Osterberg,[4] who use the volume from 0-30 minutes, for two reasons Firstly, it is easier to devote complete attention to emptying at 10 minutes, and, secondly, it often happens that the acidity or the volume is greater during the period from 10-50 minutes than at any other time The period from 10–50 minutes covers the maximum volume and the maximum acidity in all our cases



The following characteristics of each test have been tabulated —

(1) Highest free acidity reached. Titration with Toepfer's reagent, result expressed as c.cm N/10 acid per cent

(2) Highest total acidity reached Titration with phenolphthalein (for comparison with Polland's figures)

(3) Volume of juice secreted per hour (in c cm) This is obtained by multiplying the volume from 10–50 minutes by 1 5

(4) Volume of free acid secreted per hour (c cm N/10 acid) This is calculated by adding together the volume of acid secreted during each 10 minute period from 10-50 minutes and multiplying the result by 1 5 The volume of acid is of course the volume of juice multiplied by the concentration of acid

In a number of cases determinations were made of the pepsin and total chlorides which are to be reported separately

It is not in general necessary to tabulate both free and total acid since they differ constantly by about 10 units in normal persons The use of the free acid has the advantage that cases of achlorhydria are clearly indicated The volumes and acidity usually increase up to 30 or 40 minute period and then decrease but the maximum may occur at any time from 10–60 minutes We were not able to repeat the test upon all cases in which the juice was bile stained, as recommended by Bloomfield and Polland, but in one case where this was done no noticeable difference was seen on the second occasion In general it appeared probable from the course of the acidity that regurgitation did not have much neutralising effect even when the specimens were bile stained

The presence of blood in traces just visible to the naked eye was a frequent finding, especially in the later specimens. Otherwise the juice was usually water-clear

There was very little correlation between the volumes of juice and the concentration of acid (see figure) except in three subjects with the highest volumes and the one subject with achlorhydria

No severe discomfort was produced by the histamine in the dosage which we employed About a quarter of the subjects had headache, either at the time of the injection or later, but not of great severity One individual with low blood pressure (100/75) experienced faintness and giddiness for two or three minutes after the injection Nearly all the subjects who had previously had a gruel fractional test-meal declared their preference for the histamine test

RESULTS

The results are given in Tables I to VI Attention may be directed to the following points —

The distribution of *highest free acidity* is such that all values from 0 to 140 c cm N/10 acid per cent can occur in normal persons The distribution is obviously skew, values above the mean occurring more frequently than those below The single case of achlorhydria, on whom the test was repeated three times, gave no history of digestive disturbance beyond occasional flatulence, and was in good health

TABLE I—*Highest Free Acidity*

A.=100 normals. B=20 with dyspeptic parents C.=80 without dyspeptic parents. D=8 additional subjects with a history of abdominal pain S D=Standard deviation S E.=Standard error Co v=Coefficient of variation

C cm N/10 acid %	A.	B	C	D
140	6	1	4	0
135	5	0	5	1
130	10	2	8	1
125	7	4	3	0
120	8	3	5	2
115	4	2	2	1
110	8	1	7	0
105	10	2	8	0
100	6	1	5	1
95	4	1	3	1
90	7	—	7	—
85	3	—	5	—
80	4	—	4	—
75	—	—	—	—
70	5	2	3	—
65	1	1	—	—

C cm N/10 acid %	A	B	C	D
60	2	—	2	1
55	5	—	5	—
50	—	—	—	—
45	1	—	1	—
40	1	—	1	—
10	1	—	1	—
0	1	—	1	—
Totals	100	20	80	8
Means	101 6	111 7	99 1	109 4
S D	28 3			
S E	2 83	6 33	3 16	•
Co v	27 9			

The *volume of juice per hour* and the *volume of acid per hour* are symmetrically distributed about means in the neighbourhood of 200 c cm The volume of acid shows a rather greater variability This symmetry is an advantage from the point of view of statistical treatment.

TABLE II.—*Volume of Free Acid per hour*

C cm. N/10 acid %.	A.	B.	C	D	C cm. N/10 acid %	A.	B.	C	D.
460	—	—	—	1	80	5½	—	5½	—
340	½*	½	—	—	60	1½	½	1	—
320	1½	1	½	½	40	2½	½	2	—
300	3½	1	2½	½	20	½	—	½	—
280	8½	3½	5	1	0	1½	—	1½	—
260	5½	3½	2	1					
240	6	2½	3½	1	Totals	100	20	80	8
220	11½	½	7½	½					
200	9½	—	9½	½	Means	182 3	229 5	170 5	255 0
180	11	—	11	—					
160	11	—	11	—	S D. .	72 2			.
140	9	1½	7½	2	S E	7 22	16 1	8 07	..
120	5½	1	4½	—	Co v .	39 6	..	.	..
100	5½	½	5	—					

* Fractional values signify the occurrence of acidities half-way between the grouping units

TABLE III.—*Volume of Gastric Juice per hour*

C cm. N/10 acid %.	A	B.	C.	D	C.cm. N/10 acid %.	A.	B.	C.	D.
380	—	—	—	½	120	2	—	2	—
360	—	—	—	1	100	4	—	4	—
340	1½	½	1	½	80	2	1	1	—
320	1½	½	1	—	60	1	—	1	—
300	1	1	—	1	40	—	—	—	—
280	5	3	2	½					
260	8	2½	5½	1	Totals	100	20	80	8
240	9	1½	7½	1					
220	16½	5½	11	½	Means	199 6	230 5	191 9	267 5
200	18½	3	15½	½					
180	9½	½	9	½	S D	54 3		.	..
160	14	½	13½	—	S E	5 43	12 1	6 07	
140	6½	½	6	—	Co. v..	27 2	..	..	

TABLE IV

Three students who exhibited achlorhydria with a previous gruel fractional test-meal

No	Highest free acidity.	Free acid per hour.	Gastric juice per hour
1	120	90	90
2	70	70	100
3	85	200	250

These results on 100 normal students may now be compared with Polland's figures and with those of three sub-groups

The mean total acidity is higher than Polland's value for a similar age-period (20–29), but the difference (9 9±5 09) is just within the limits of sampling errors (Table V)

TABLE V A.—*Statistical Analysis of Differences*

—	Mean total acidity	Standard error
100 normal students	111 0	2 77
Polland's 70 cases . .	101 1	4 27
Difference .	9 9	5 09

The difference does not exceed twice its standard error and is therefore not significant

The eight students with a history of abdominal pain (Table V B) show no difference in the highest free acid, but a definite increase in the volume of juice and the volume of acid. Most of this is however due to one case with an exceptional output of acid, and the exclusion of this leaves the volume of juice as the only significant difference.

TABLE V B

—	Mean highest free acid.	Mean vol acid per hour	Mean vol. juice per hour.
100 students . .	101 6	182 3	199 6
8 with abdominal pain .	109 4	255 0	267 5
Difference . .	7 8	72 7	67·9
Value of "t"* ..	0 76	2 65	3 96

* See Fisher[6]

For this number of cases, the probability that "t" will exceed 2 65 by chance is about 0 01. The second and third results are therefore highly significant, the first is not

TABLE V C

—	Mean highest free acid	Mean vol. acid . per hour	Mean vol juice per hour
20 students with dyspeptic parents . .	111 7	229 5	230 5
80 without dyspeptic parents . ..	99 1	170 5	191·9
Difference . .	12 6	59 0	38 6
Value of "t"* . ..	1 80	3 45	2 95

The probability that "t" will exceed 1 80 by chance is about 0 07, so that the first difference is not significant. The other two values of "t" correspond to probabilities well below 0 01 and indicate a high level of significance

Three cases out of the 100 had shown achlorhydria with a gruel fractional test-meal on a previous occasion, an inspection of Table IV. shows that their output of acid was not much below the average This is a point of some interest as these cases presumably correspond to some of the four with achlorhydria in Bennett and Ryle's[5] series of 100 normal students

Twenty cases out of the 100 had one or both parents with either peptic ulcer or severe dyspepsia of long duration These students gave no personal history of digestive disturbance A comparison with the remaining 80 shows again little difference in the concentration of acid, but a highly significant difference in the volume of juice and in the volume of acid (Table V C)

It may be mentioned here that the method used to test the significance of these results, Fisher's[6] "t" test, takes full and accurate account of the size of the sample so that the chance of these differences being due to the errors of random sampling is an extremely small one It is, in fact, less than 1·0 per cent. in nearly every case.

DISCUSSION

The principal points of interest in these results lie in the comparisons presented above and in their bearing on the question of normal standards for the histamine test. In addition the volumes of acid have not previously been tabulated and this should certainly be done in view of the fact that they appear to show wider separation in ulcer and cancer of the stomach than either acidity or volumes alone (Polland[1])

Although our value for the mean total acidity is higher than that of Polland for a similar age-period, the difference is just within the limits of sampling errors The best estimate is therefore obtained by combining the two which gives the following result (Table VI) —

Mean total acidity, 107 0, Standard deviation, 31 5, Standard error, 2 42

Being based upon 170 cases, these figures should form a satisfactory normal standard for males between the ages of 18–30

TABLE VI —*Highest Total Acidity*

A = 100 normal students
E = Polland s 70 cases
F = The two series combined
} Males of ages 18–30

C cm N/10 acid %	A	E	F	C cm N/10 acid %	A	E	F
150–159	—	1	1	30–39	1	—	1
140–149	13	10	23	20–29	—	1	1
130–139	18	11	29	10–19	—	2	2
120–129	13	7	20	0–9	1	1	2
110–119	16	6	22				
100–109	12	5	17	Totals	100	70	170
90–99	9	7	16				
80–89	4	6	10	Means	111 0	101 1	107·0
70–79	5	4	9				
60–69	6	4	10	S D	27 6	35 7	31 5
50–59	2	4	6	S E	2 77	4 27	2 42
40–49	—	1	1	Co v	24 9	35 3	29 4

The higher volumes of juice and acid in the 8 students with a history of abdominal pain justifies their exclusion from the normal tables, and suggests that some of them may have suffered from peptic ulcer

The high volumes of acid and juice in the 20 normals with dyspeptic parents is a finding of some interest Since most of these parents probably had peptic ulcers* and therefore hyperacidity, this amounts to evidence of the inheritance of hyperacidity in normal persons So far as we are aware no such evidence has previously been adduced, previous work on the inheritance of gastric secretion being confined to persons with ulcers or achlorhydria This point may be taken as a strong argument in favour of Hurst's [7] conception of the "hypersthenic gastric diathesis" as an inborn condition There is of course the alternative of the throwing the blame upon the family cook

We wish to stress the importance in this test of the estimation of the volume of juice secreted (and in the calculation of the volume of acid secreted) upon which doubt has recently been cast by Comfort and Osterberg [4] It will be seen from the results that the concentration of acid taken alone failed to show any difference in the two sub groups which have been considered, though highly significant differences were demonstrated in the volume of juice and in the volume of acid It is however important that the method of estimating the volume should be standardised

Finally a word of warning must be added respecting the use of histamine in cases with low blood pressure We have seen dangerous degrees of collapse in such cases even after comparatively low dosage (0 25 mg) and consider that the blood pressure should be estimated as a routine before the test

SUMMARY

1 Results of 100 test meals on normal male students between the ages of 18 and 32 have been recorded

2 The highest free acidity, the volume of gastric juice per hour, and the volume of free acid per hour have been taken as the useful characteristics of the test

3 One individual, in perfect health, exhibited achlorhydria even after repeated tests †

4 The mean total acidity is higher than Polland's value for the same age-period, but the difference is not statistically significant The two values have therefore been combined to give an estimate which should form a satisfactory normal standard for males from 18–30 years (Table VI)

5 Eight additional students with a history of abdominal pain showed a higher volume of juice and acid, but no differences in the concentration of acid

6 Twenty students (out of the 100 normals) who had one or two dyspeptic parents showed definite differences in the volumes of acid and juice, but no increase in the concentration of acid This is considered as evidence of the inheritance of hyperacidity in normal persons

7 Some recommendations in the technique of the test have been made particularly with reference to the method of volume estimation

8 The greatest caution should be exercised in the use of histamine in cases with low blood pressure.

It is a pleasure to express our indebtedness to Prof E C Dodds and to Prof S Wright for valuable help and advice We are also extremely grateful for the willing coöperation of the students and house officers who formed the subjects of this investigation

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SURGICAL ANATOMY OF THE ANAL CANAL

WITH SPECIAL REFERENCE TO ANORECTAL FISTULÆ

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(*Concluded from p 1156*)

Recognition of Fistulous Tracts and Openings

An anorectal fistula is the contracted *cavity of an* abscess which has been inadequately treated and has consequently failed to heal completely by *third* intention There is usually an external opening, a main track, and an internal opening There may be secondary tracks and secondary external openings W E Miles quotes as a curiosity, a case where these numbered 42 Usually, secondary tracks are absent, and, if present, limited to one or two Secondary tracks however extensive are as a rule placed in the subcutaneous tissues and unrelated to the musculature They are easily dealt with by incision and do not complicate the surgical problem

The *external opening* may be obvious with pouting, raised granulation tissue giving rise to purulent discharge, but occasionally the external opening is small with no protruding granulations and admitting only a very fine probe If hidden by folds of skin or mucous membrane careful search alone will reveal it Its locality may often be detected from the small discharge of expressed pus only present on occasions A magnifying glass helps in its location

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* Ten parents had had peptic ulcers, and the remaining 11 had had chronic abdominal pain related to meals

† Since this paper was written a fourth test meal has been performed on the case of achlorhydria and on this occasion a small amount of free HCl was obtained in every sample save the resting juice The highest concentration of HCl reached was [illegible] c cm N/10 NaOH and the output of HCl was extremely

In fistulæ of long standing the external openings may be healed, as exemplified in a fistula we observed of ten years' duration. The healed openings are indicated by inconspicuous dimples of scar tissue. No discharge escapes and admission of the probe to the underlying track can only be gained when the dimples are excised. The lining granulation tissue then reveals the fibrous track.

Irregular undermining ulceration at the external opening is characteristic of tuberculous infection. The position of the external opening in relation to the anal canal is of academic interest and suggestive up to a point of the direction of the main track, but palpation of the peri-anal tissues and the inserted probe give the definite information required for safe surgical treatment.

The main track.—Microscopic sections of fistulous tracks show that they are composed of a tube of hard fibrous tissue, the lumen of which is filled with granulation tissue which gives rise to the discharge of pus and blood The characteristic appearance of granulation tissue aids in tracking the course of the fistula, just as granulations lead the surgeon to dead bone, as its appearance contrasts strikingly with normal surrounding healthy tissue The fibrous channel moreover prevents the exploring probe, if used gently, from deviating from the course of the fistula, and so reveals its direction The direction and course of this fibrous track can be palpated through the skin and followed in the ischiorectal fossa and around the anus, as a fibrous cord of induration in the surrounding normal pliable and elastic tissues. Tuberculous fistulæ usually differ from simple inflammatory fistulæ in the absence of this indurated fibrous track, a highly suggestive and important diagnostic point.

In another type of fistula, fortunately rare, the main track eludes discovery and the fistula after many operations remains unhealed. In this type epithelisation of the inside of the track has occurred, granulation tissue has almost disappeared, and the fibrous tissue tube has become thin and pliable and cannot be easily palpated. Moreover, the lumen is narrow and will only admit with difficulty the finest of diagnostic probes Discharge is intermittent and scanty.

Occasionally one fails to find the main track before and even during operation, but by careful and persistent search with a probe while the wound is healing, the track, which one knows must be present, is now more easily discovered entering the anal canal. When this elusive track is opened by incision the fistula heals.

The importance of careful routine search with probes for tracks in all cases during the healing of the wound cannot therefore be too strongly stressed, for tracks undiscovered before and during operation now become manifest. No amount of careful dressings, on which some lay so much stress, will promote healing if sinuses or tracks are overlooked.

The *internal opening of a fistula* is more easily discovered by light palpation of the anal mucosa with the finger in the anal canal than by inspection with the proctoscope It may be felt as an indurated irregular obvious ulcer, sometimes as a hard fibrous dimple or rounded projection in the attached mucous membrane In others there is a tiny indurated nodule or "roughness" indicating the end of a fibrous tube under the intact mucous membrane, only discernible to the lightest palpation but standing out in contrast to the surrounding smooth anal canal In some the opening cannot be palpated although present, but a probe passed through the main track will find its way through the internal opening into the anal canal, or the point of the probe can be felt in the submucosa through the healed and intact mucous membrane *For purposes of safe surgical treatment* the relationship of the internal opening and main track to the anorectal ring should now be determined by palpation. It should be noted whether they lie above or below the ring

The openings of anal and rectal submucous sinuses, although often palpable, are sometimes best found with a proctoscope. Pus expressed from the sinus by the pressure of the end of the instrument shows the position of the opening, and a thin probe, straight or bent, entering at this point will reveal the direction of the track.

Healing of Fistula-in-Ano

It is now the accepted custom to apply no healing balm or lotion to wounds that heal by *first intention.* Reliance is placed on nature's healing powers. When healing by *second intention* is invoked, however, dissatisfaction with nature's rate and method of healing is at once implied by subjecting the wound to applications of lotions or ointments, labelled by the manufacturers, or even in the mind of the surgeon, soothing, stimulant, antiseptic, or caustic In spite of this misguided attention, healing by second intention, provided the surgery is correct, maintains its own course and time, confirming the credulous in their faith and bestowing reputations on numberless *and ever-changing applications*

The Winnett Orr treatment of osteomyelitis, the healing of ulcers under adhesive plaster (Maclure, Dickson Wright), and the healing of a colostomy wound bathed in fæcal flora must at least arouse the critical faculties in those who imagine they possess the power to stimulate, soothe, retard, or sterilise a granulating wound with applications

Theoretical views advanced for the fact that surgically untreated fistulæ-in-ano never heal are well known and need not be mentioned here. Howbeit, it is common experience to see suprapubic vesical fistulæ, gastric fistulæ, and cæcal fistulæ heal naturally and unaided. Healing takes place by adherence of the walls of granulation tissue along the track of the fistula To this method is given the name, healing by *third intention* Abscess cavities in other parts of the body also successfully heal by this method.

A *fistula-in-ano* results from the failure of an abscess in this region to heal by third intention. To promote healing, surgical treatment is always necessary and consists in so incising the track of the fistula that the open flat wound thus obtained will heal by second intention In other words, healing occurs by the growth of granulation tissue from the base of the wound and by the covering of this granulating surface with epithelial cells from the skin or mucous membrane at the periphery. This method of healing is nearly always employed in rectal surgery as it is the only method in this area upon which complete reliance can be placed The prevention of bridging, pocketing, of overhanging skin, especially at the anal verge, and of sinus-formation—i.e., prevention of attempts to heal by third intention during convalescence—is all that is necessary from the surgeon. Healing by second intention is then the rule if specific infections, tuberculosis, and syphilis are absent.

To change nature's unsuccessful attempts at healing by third intention into the successful process of healing by second intention, a fistula must therefore be incised along the whole track. All overlying tissues from the external to the internal opening must be cut and overhanging skin edges removed so that a flat wound is obtained This is technically simple to accomplish when the tracks and openings are found, but anxiety and difficulties arise owing to the relation of the tracks to the anal muscles which, in certain fistulæ, are in the overlying tissues and so would necessarily be cut in order to lay open the tracks.

Classification

In the past the main problem, the relationship of the fistulous tracks to the anal musculature, has been obscured by a complicated classification based on the shape and direction of the subcutaneous tracks We submit the following classification as being simple and practical (Figs 15 and 16)

1 Subcutaneous and submucous fistulæ

2 Fistulæ with main tracks entering the anal canal *below* the anorectal ring (anal fistulæ) (*a*) low level anal fistula, and (*b*) high level anal fistula

(3) Fistulæ with track extending *above* the anorectal ring (anorectal fistulæ) (*a*) with internal opening into rectum, (*b*) without internal opening, and (*c*) with main track opening into anal canal below anorectal ring

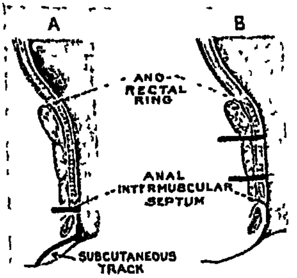

FIG 15—Fistulæ with main tracks entering the anal canal below the anorectal ring (*a*) Low level anal fistula, (*b*) high level anal fistula

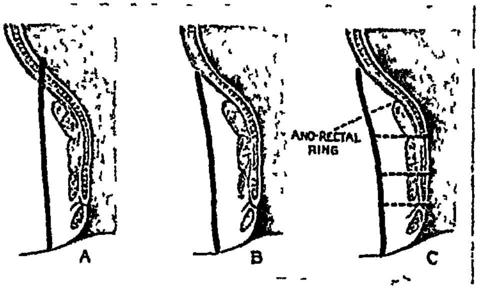

FIG 16—Fistulæ with track extending above anorectal ring (*a*) With internal opening into rectum (*b*) without internal opening and (*c*) with main track entering anal canal below anorectal ring

Surgical Treatment of Fistulous Tracks in Relation to Sphincter Ani Muscles

SUBCUTANEOUS AND SUBMUCOUS FISTULÆ

A probe is inserted through the external or lower opening, then along the main track and made to emerge at the internal or upper opening If the sinus is blind an incision at the point of the probe allows it to emerge The probe is now felt to lie under the skin or mucous membrane and superficial to all the sphincter muscles, and is liberated by incising the overlying tissues, which in this type of fistula consist only of skin or mucous membrane Sphincter muscles are out of the scope of the operation. The resulting wound is made flat by excising overhanging skin edges.

It is worthy of mention that some subcutaneous sinuses radiate outwards from the anal verge, and submucous fistulæ often take a circular or curved course under the rectal mucosa above the anorectal ring, so that a bent or angled probe in these circumstances is helpful These submucous tracks pass in close relation to the hæmorrhoidal vessels in the submucosa. Hæmorrhage, difficult to arrest, may follow their incision where the tracks extend above the anorectal ring, so it is well to follow the ancient method of opening the track by destroying the mucosal roof by strangulating ligatures.

FISTULÆ WITH MAIN TRACKS ENTERING THE ANAL CANAL BELOW THE LEVEL OF THE ANORECTAL RING (FIG 15) (ANAL FISTULÆ)

(*a*) *Low level anal fistulæ.*—The majority of fistulæ in ano enter the anal canal at its lower extremity and are closely related to the easily palpable subcutaneous sphincter ani externus

The track enters the anal canal just above this muscle in the region of the anal intermuscular septum between the subcutaneous external sphincter and the lower border of the internal sphincter ani, where the internal opening can usually be demonstrated by probe and palpation In some cases, however, the main track then extends upwards under the mucous membrane, and the internal opening is situated at a higher level, sometimes above the anorectal ring This submucous extension of the main track must be treated as a submucous fistula Sometimes there are two internal openings, the upper one just described at the upper end of a submucous extension, the other an opening in the mucous membrane where the main track runs between the sphincter muscles It is not always easy to demonstrate the exact relationship of the fistulous track to the external sphincter ani subcutaneus, because inflammatory fibrous tissue has altered and obscured the anatomical outlines, but the muscle may be identified by palpation and followed from an adjacent unaltered area The division of the subcutaneous external sphincter ani, in part or whole, or in any direction, as we have seen, is *harmless to sphincter control*, for it leaves intact the *deep* and *superficial* part of the sphincter ani externus above, as well as the puborectalis with the anorectal ring

To establish the relationship of the main track *to the subcutaneous external sphincter* is therefore *only of academic importance*, but of practical importance is the relationship of the track to the anorectal ring A probe passed from without through the main track into the anal canal is felt to lie at *some distance below* the anorectal ring, so that the *probe can be safely liberated* by cutting the overlying muscle and skin leaving the ring intact The submucous extension upwards is now sought with the probe, and if present, opened into the anal canal or rectum *It is obvious that division of a submucous track does not injure the musculature*

(*b*) *High level anal fistulæ*—This type of fistula is less common and a more difficult problem *The main* track usually enters the anal canal at its upper part in the posterior segment just below the anorectal ring. They are often of long standing and have been preceded by widespread infection with resulting curved subcutaneous tracks in one or both ischiorectal fossæ.

The exact position and relationship to the anorectal ring must be accurately established. In this lies the chief problem

A probe inserted along the main track from without into the anal canal will be felt to lie just below the anorectal ring, some muscle forming the ring being definitely felt lying above the probe It now requires courage and assurance to liberate the probe by cutting the large bundle of muscle lying below it Those in doubt would leave the division of the muscles till the large wound left by the opening up of the rest of the track into the ischiorectal fossæ has almost healed ; the so-called *two-stage operation for fistula.* By this means the muscles, bound down by new fibrous tissues during the preliminary healing, are said to retract less when divided It is safest to adopt this two-stage method if the relationship of the track to the anorectal ring cannot definitely be decided. It has no other advantages over the one-stage operation We have never yet seen nor felt it justifiable to ascertain the result of complete division of the anorectal ring by the technique of the two-stage operation, but believe that even this manœuvre would not prevent incontinence

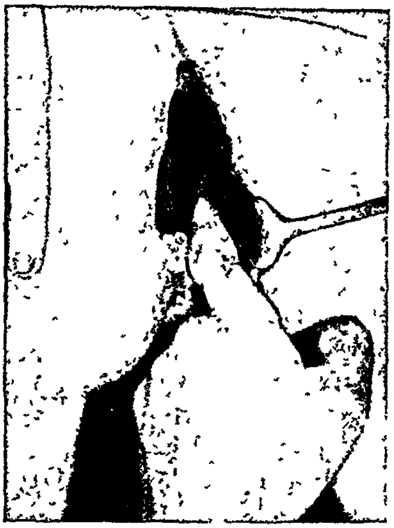

FIG 17 —Surgical treatment of fistula extending above anorectal ring Wound guttered backwards towards coccyx. Anus and anal muscles intact.

Because of their intimate relationship and altered condition due to fibrous infiltration, it is difficult to identify by name the muscles divided in this type of fistula It is probable that part of the deep, all the superficial, and all the subcutaneous external sphincter are cut, as well as the corresponding related parts of internal sphincter and longitudinal muscle The puborectalis and some intimately attached fibres of the deep external sphincter ani together with the related portion of the internal sphincter ani and longitudinal muscle are left intact, forming the complete anorectal ring It is often found after healing has occurred that the narrow ring left posteriorly becomes rigid and fibrous However, as long as it has been left complete and intact, satisfactory control is assured whether the operation is done in one or two stages This type of fistula readily heals, for a satisfactory flat granulating wound is surgically obtainable.

It should be pointed out that low spinal anæsthesia, now commonly used in rectal surgery, by causing muscular relaxation adds to the difficulty of palpating the relaxed anorectal ring in relation to the probe, unless this relationship has been established previously Under such conditions when doubt exists, the division of the muscle should not be carried out at this operation. The estimation of the exact relationship will only be possible when the musculature has recovered from the effects of the anæsthesia It is suggested then that light general anæsthesia be employed in this type of fistula if relationship to the anorectal ring is uncertain.

Associated with high level anal fistulæ, short tracks would be expected and indeed are found where suppuration has spread between the longitudinal and circular muscles before breaking through into the anal canal (intermuscular fistula). These tracks resemble submucous fistulæ from which they are difficult to distinguish because of surrounding inflammatory thickening

At operation the inlying probe should be liberated into the anal canal by cutting the overlying tissue Severance of the internal sphincter in this manner has no effect on anal function, as the anorectal ring remains intact.

FISTULÆ-IN-ANO WITH MAIN TRACK OR SINUS EXTENDING ABOVE THE ANORECTAL RING

(FIG. 16) (ANORECTAL FISTULÆ)

In all the types of fistulæ already described—viz , submucous, subcutaneous, and those in which the main track lies below the anorectal ring—it is possible with safety to cut the necessary muscles and lay open the fistula so that a flat wound is left without sinuses, pockets, or overhanging skin edges, so flattened out that it will not retain plugging gauze. A wound thus shaped will heal with certainty by second intention. This type of fistula is fortunately by far the most common In the remaining types under consideration, however, to lay open the fistula satisfactorily into the anal canal and make a flat wound it would be necessary to cut the anorectal ring, with resulting incontinence Other means of obtaining healing, less sure and more prolonged, must be adopted.

Although *three types* of fistula-in-ano with main tracks or sinuses extending above the anorectal ring are encountered, the principles of treatment in all are the same.

The rarest and perhaps the one type in which it is most difficult to obtain healing is characterised by an internal opening into the rectum itself. The external opening is situated about 1½ in to 2 in lateral to the anus on the skin of the floor of the ischiorectal fossa The main track takes a straight course upwards and inwards to the rectum roughly parallel to the long axis of the anal canal through the ischiorectal fossa, piercing the lateral part of the levator ani (ileococcygeus). A probe passed along this main track is felt to emerge in the lateral wall of the rectum 1 in or more above the anorectal ring

In the *second type* the main track is similar to that already described, but there is no internal opening into the rectum The point of the probe at the uppermost limit of the main sinus is felt through the *intact* rectal wall lying 1 in or more above the anorectal ring, the rectal wall intervening

In the *third type*, like the second, there is no internal opening into the rectum above the anorectal ring, but with a probe the track is found to extend above this level. There is, however, an opening into the anal canal below the anorectal ring The high sinus, in this type, is in fact an offshoot or secondary sinus from the main track of a fistula which enters the anal canal below the anorectal ring posteriorly

SURGICAL TREATMENT

Anatomical considerations prevent the conversion of such deep tracks in the ischiorectal fossa into a flat wound which would be the guarantee of ultimate healing One must be content with guttering the track, and, as will be shown, this can only be carried out in the first instance posteriorly towards the coccyx (Fig 17)

When the boundaries of the ischiorectal fossa are considered, it will be appreciated that if the deep track is incised and extended forwards, the incision would pass through the transversus perinei muscle and into the urogenital triangle This is undesirable An outward guttering of the track is prevented by the tuber ischii Incontinence would follow the usual method of laying open the whole length of such a track inwards into the anal canal, for as the track extends above and outside the anorectal ring, the ring together with the rest of the anal musculature would necessarily be severed.

Posteriorly the skin level just lateral to the coccyx is approximately on the same horizontal plane as the roof of the ischiorectal fossa, which is about the upper limit of the track under consideration, so we are happily enabled to gutter the surgical wound by cutting backwards from the track through the tissues and skin of the ischiorectal fossa to the level of the coccyx During this procedure the anal muscles are felt and guarded by a finger in the anal canal

On the very rare occasions where the upper limit of the track extends two or three inches above the anorectal ring, it has been found necessary to remove the coccyx to obtain adequate grooving of the resulting cavity backwards Such a procedure is a successful alternative to the condemnation of the case as incurable

To retard re formation of sinuses by rapid skin healing the whole of the unimportant skin floor of the ischiorectal fossa is liberally removed, leaving a wide funnel shaped wound from the floor to the roof of the fossa Later, when the depths of the wound fill with granulation tissue, as is its custom, bringing its level to below the anorectal ring as judged by palpating the end of the probe in the wound through the anal canal, the sphincter muscles below the anorectal ring can be safely cut Thus the inner wall of the wound will now also be guttered and so healing by second intention is hastened and assured

The internal opening into the rectum described in the first type should be disregarded If it is not large, or if its walls are not rigid, it will probably heal as the surgical wound in the ischiorectal fossa heals This type impresses more by the difficulties of healing than by its frequency, for it is fortunately rarely seen in a large experience

Inflammatory fibrous tissue surrounding the main track in these types has made identification of the related lateral portion of the levator ani (iliococcygeus) through which the main track passes difficult and uncertain, but as this portion is the thin fibrous degenerated tail muscle and has no direct connexion with the rectum or sphincteric action, anxiety need not be felt in incising what is necessary for the adequate surgical treatment of the fistula

AFTER TREATMENT

The resulting extensive wound calls for supervision during the long process of healing to prevent further sinus formation, to maintain guttering, and to remove ingrowing skin edges if necessary In accordance with modern ideas of wound dressing, daily changing of dressings to the deep parts of the wound are unnecessary although the surface gauze will daily become soiled and should be changed For the first sensitive dressings some suitable form of short anaesthesia prevents unnecessary suffering In the cases under our care four to ten months have elapsed before healing is complete

Routine pathological examination is strongly recommended in this type of sinus, for it sometimes reveals tuberculosis as the unexpected cause

Summary

(1) An account of the muscles of the anal canal is given

(2) The "surface" anatomy of the anal canal is described together with the palpable landmarks and their relation to pathological lesions and to function

(3) The identification of fistulous tracks, their surgical treatment in relation to the anal musculature, and their method of healing are considered

(4) A simplified practical classification of fistulæ in relation to palpable landmarks in the anal canal is submitted.

TWO CASES OF AGRANULOCYTIC ANGINA

ONE FOLLOWING THE ADMINISTRATION OF ALLONAL

By J H Fisher, M B Sydney

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THE two cases of agranulocytic angina here recorded were admitted to the North Eastern Fever Hospital certified as suffering from diphtheria

CASE 1.—A man, aged 23, was admitted to hospital on June 1st, 1934, at 9 P.M and died on June 2nd at noon

Previous illnesses—Measles, chicken pox, tonsillitis No history of taking drugs of any kind

History—Prior to the illness for which he was admitted he was perfectly well. On May 26th, six days before admission, he began to complain of headache and sore throat and generalised aches and pains. The glands of the neck became very much enlarged and at times he was delirious On May 31st he was noticed to be slightly yellow

On admission on June 1st he was very emaciated moderately jaundiced, and appeared critically ill Temperature 103° F, pulse rate 130 respiration rate 30 There was very extensive cervical adenitis and periadenitis, giving the appearance of "bull neck" The fauces were very inflamed and œdematous, with ulceration and irregular areas of sloughing involving the tonsils and anterior pillars There was a greyish-white membrane on both tonsils extending on to the anterior pillars soft palate, and posterior pharyngeal wall The patient was conscious on admission and able to answer questions, but became rapidly worse The next morning he was unconscious, sweating profusely, with a rapid and weak pulse and irregular respirations He died at noon

Investigations—Culture of nose and throat for diphtheria bacilli was negative Swab of nose and throat for hæmolytic streptococci nose, negative, throat, a few colonies of hæmolytic streptococci Van den Bergh reaction: direct, delayed, indirect, positive Blood count leucocytes, 1000 per c mm, no granulocytes seen; red cells, normal; platelets, fairly numerous Blood culture a pure culture of pneumococcus was obtained

Post mortem findings.—Kidney œdema of interstitium, patchy congestion of glomeruli, marked degeneration in convoluted tubules, varying from breakdown of tips of cells into the lumen to complete disappearance of nuclear staining The main lesion seems to be this (apparently toxic) tubular degeneration Liver: very little fat though a very fine dusting does show in a number of cells; only slight degenerative changes in liver cells some œdematous swelling of the fine connective tissue of the sinusoid walls and some proliferation of Kupffer cells Spleen congestion of sinusoids and considerable proliferation of reticulo endothelial cells of pulp No marked changes in Malpighian bodies In contrast to the liver and kidneys which showed practically no polymorphs there are quite [illegible] numbers here—almost all of them showing marked degeneration—sometimes distortion and hyperchromatism of the nucleus, sometimes fragmentation of the nucleus into hyperchromatic fragments, and sometimes partial chromatolysis In at least one instance a degenerated polymorph lay engulfed in the cytoplasm of a large pulp phagocyte Bone-marrow . no decided change, qualitative or quantitative, in red cell series; polymorphs absent, myelocytes practically absent, but considerable numbers of myeloblasts—rather as if it were the maturation of the cells which was inhibited Lungs and heart . nothing abnormal detected

CASE 2 —Miss A B., aged 62, was admitted to hospital on June 18th, 1934, at 4 P M, and died on the 19th at 2 20 P M

History.—She had been treated for diabetes for 18 months and on June 2nd was admitted to a general hospital for standardisation of diet and insulin requirement She was having a high carbohydrate diet, the caloric value of which was 1500, and was receiving insulin three times a day in doses of 15, 10, 15 units. Her general condition was good and she was getting up each day. Whilst there, she received one tablet of Allonal (allylisopropylbarbituric acid with amidopyrin) each night from May 30th to June 16th This was then changed to Medinal grs 5 nightly until June 18th She became ill on June 16th with nausea and vomiting On the 17th she developed a sore-throat. A swabbing from the throat was examined and the case was thought to be one of diphtheria, and she was transferred to the North Eastern Fever Hospital After the development of these symptoms she had been having 100 g. of glucose by mouth four-hourly, with 50 units of insulin four-hourly.

State on admission —Temperature 102° F, pulse-rate 124, respiration-rate 32 She appeared very ill. There was marked bilateral cervical adenitis and periadenitis The tongue was dry and the fauces much inflamed and œdematous Sloughing and gangrenous areas on the tonsils were covered with a greyish-white membrane which extended on to the uvula and posterior pharyngeal wall Her condition rapidly became worse and she died at 2 20 P M the next day She was conscious until shortly before death Repeated examinations of the urine showed only small to moderate quantities of sugar and no acetone or diacetic acid. A fairly heavy cloud of albumin was present.

Investigations —Culture of nose and throat for diphtheria bacilli: negative, no spirilla or fusiform bacilli found. Swab of nose and throat for hæmolytic streptococci . negative. Blood count: leucocytes, 400 per c mm., no granulocytes present. Red cells, normal; platelets, numerous

Post-mortem findings —Pharynx and tonsillar fossæ in region of maximal local lesion · the picture is that of an intense and widespread inflammatory process, going on in parts to necrosis, yet completely lacking in the usual polymorph reaction, and showing only a slight lymphocytic reaction The following changes are seen in the kidneys. Glomeruli · thickening of capillary basement membranes; a few scattered hyaline glomeruli Afferent arterioles, some hyaline thickening Larger arteries . fairly marked arterial sclerosis *Interstitium* · *slight patchy increase* Tubules · considerable recent degeneration of convoluted tubules Lumen often shows albuminous material and debris of tips of lining cells Arterio-sclerotic kidney, with sufficient arteriolar change to suggest the presence in life of some degree of (benign) essential hypertension, not insufficient kidneys

Pancreas islets rather large, with in a minority a very considerable amount of hyaline change, some pyknosis of islet cell nuclei, some arterial sclerosis, with hyaline thickening of arterioles, pancreatic acini and ducts, nil abnormal noted Liver: some congestion, nil important noted Spleen · sinusoids dilated; some proliferation reticulo-endothelial cells and a fair amount of brown pigment both intra- and extra-cellular; practically no polymorphs seen; Malpighian bodies fairly conspicuous Bone-marrow (sternum): no polymorphs and hardly any myelocytes, but considerable numbers of myeloblasts, normoblasts rather scanty Femoral marrow almost entirely fatty, but there are a few small groups of cells (probably myeloblasts) around some capillaries

COMMENT

Both the cases described present the typical features of agranulocytic angina—an acute febrile illness, necrotic and ulcerative lesions in the mouth and pharynx, and an extreme reduction of the granulocytes in the blood stream Case 1 was found to have a terminal pneumococcal septicæmia. Terminal invasion of the blood stream has been described many times and a multiplicity of organisms found [1]

Recently there has been much discussion concerning the ætiological significance of certain drugs in agranulocytic angina S Stephen Bohn,[2] Solomon Silver,[3] and Davidson and Shapiro [4] reported cases following ingestion of dinitrophenol Madison and Squier [5] reported 14 cases in which the onset was directly preceded by the use of amidopyrin alone or in combination with a barbiturate. Allonal (allylisopropylbarbituric acid with amidopyrin) was the drug used in six of the cases The mortality in a group of six patients who continued the use of drugs containing amidopyrin throughout their illness was 100 per cent In a group of eight patients who did not continue the use of these drugs, only two died, and both of these died shortly after the drug was withdrawn The administration of a single dose of amidopyrin to two patients who had recovered from an acute attack was followed by a rapid and profound fall in the granulocytes Some experimental work was performed on rabbits; 17 out of 18 to which allonal was administered orally showed no significant change; the eighteenth showed an abrupt drop of granulocytes and died on the thirtieth day Preceding death there was a complete loss of granulocytes in the peripheral blood Their conclusion was that amidopyrin alone, or in combination with a barbiturate, is capable of producing primary granulocytopenia in certain individuals who have developed sensitivity to the drug Case 2 can be considered as belonging to this group The patient developed the condition while in hospital Although suffering from diabetes, her general condition was good and she was getting up each day While there she had one tablet of allonal daily for 17 days and the medinal grs 5 for two days. Her symptoms commenced on the seventeenth day Apart from an occasional aspirin, she had taken no drugs prior to this In Case 1 no drugs of any kind were being taken prior to the onset of symptoms It therefore belongs to that series of reported cases in which no ætiological factor can be determined.

The pathology of the bone-marrow in agranulocytic angina is variable, either hyperplasia or aplasia of the myeloid elements being reported Both these cases show a complete absence of polymorphonuclear leucocytes, very few myelocytes, but numerous myeloblasts, the findings being similar to those described by Fitz-Hugh and Krumbhaar,[6] who put forward the hypothesis that the myeloid hyperplasia is due to a "primary maturation arrest" rather than to a "primary aplasia," and pointed out certain analogies to pernicious anæmia In purpura hæmorrhagica the bone-marrow may show either megakaryocyte hyperplasia or aplasia Douglas Hubble [7] suggests that there is one variety of agranulocytic angina and one variety of purpura hæmorrhagica allied to aplastic anæmia, for in all three the formation of blood-cells is arrested at the reticulo-endothelial stage by the absence of certain factors The other varieties are comparable to megaloblastic anæmia In this last there is a circulating anæmia in spite of proliferation of the megaloblast, hyperplasia of the megakaryocytes with a peripheral thrombocytopenia, and a myeloid hyperplasia with a peripheral agranulocytosis We were unable to obtain supplies of Pentnucleotide in time to carry out treatment, as the two cases died 15 hours and 23 hours respectively after admission

I desire to express my thanks to Dr W Mair and Dr J Gray for their valuable assistance and advice in the pathological and hæmatological investigations involved, and to Dr E H R Harries medical superintendent of the North Eastern Fever Hospital, for his permission to publish these cases

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AGRANULOCYTIC ANGINA

A CASE TREATED WITH PENTNUCLEOTIDE

By E J Smith, M B Lond

TEN cases of agranulocytic angina in this country have been recorded In America the disease has been recognised for upward of ten years and series of cases—one of them comprising over 300—have been collected Five of those described in the English literature were given pentose nucleotide, and in some at least the response was not quite similar to that obtained by American writers

The routine use of Pentnucleotide (formerly nucleotide K-96) has materially altered the prognosis of this disease In a series of 328 cases only 82 recovered without specific treatment [1] Jackson Parker, and Taylor treated 69 cases with pentnucleotide, of whom 51 recovered [2] C A Doan [3] in 1932 worked out the following Table, showing the percentage mortality of this condition and how it varies with different treatments

Treatment.	Cases	Deaths	Percentage mortality
Untreated	—	—	90+
Miscellaneous	178	133	74
Arsphenamine	33	24	72
Blood transfusion	53	34	64
Irradiation	64	34	53
Nucleotide	44	11	25

The American writers found that the blood picture consistently showed improvement on the fifth day of treatment with pentnucleotide, whereas Bulmer's [4] patient, who received pentnucleotide, began to improve with the commencement of the injections The case I am recording here also showed the interval of four days before improvement started The severity of the toxic manifestations or complete absence of polymorphonuclears from the blood do not appear to render recovery less likely when pentnucleotide is given One patient with a temperature of 106 5° F recovered Those cases in which a typical blood count is discovered during an obvious infection such as osteomyelitis and those in whom the neutropenia appears to be primary carry the same prognosis The case reported by Wilkinson and Israels [6] in many ways resembles the one described below and the response to pentnucleotide was almost identical

CASE REPORT

The patient, a woman aged 49, previously healthy, was admitted to King's College Hospital during the night of May 3rd, 1934 As the chief manifestation was extensive ulceration of the mouth, she was admitted, as an emergency, to the surgical side The woman was very severely ill

About four weeks before admission there had been an attack of "influenza" This was of sufficient severity to keep the patient confined to bed for a fortnight, and was characterised by generalised pains, nausea, vomiting, and extreme weakness No doctor was in attendance during this illness Two Allonal tablets had been taken, and these would contain a total of grs 3 of amidopyrin [5] About two weeks after getting up from this attack an ulcer was noticed on the floor of the mouth The patient was not aware of any trauma to account for this The area of ulceration increased steadily, and when it had been in progress for some seven days her husband, who is a dentist, extracted two incisors which had been loosened by the ulceration

The patient was admitted ten days after the onset of the buccal infection Her temperature was 102° F, pulse rate 116, and respirations 26 She was sweating profusely Both arms were the site of small, irregular erythematous areas, but no petechiæ were seen there or elsewhere on the body There had been no diarrhœa, and there were no signs of infection of the lungs The breath was extremely offensive, and the patient was scarcely able to speak The floor of the mouth, anterior to the root of the tongue, was occupied by a large deep ulcer This had spread on to the posterior surface of the mandible and over the alveolar process, from which the two teeth had been extracted Posteriorly it had involved the root of the tongue The submental and submaxillary triangles on both sides were the sites of brawny infiltration, but there was no suggestion of fluctuation The floor of the ulcer was covered with a brownish-white slough which was tough and firmly adherent The teeth were dirty

Local measures, such as hourly fomentations and hot mouth washes, were ordered

Two days after admission, when the temperature ranged from 100 8° to 103 2°, the blood count was as follows —

Red cells	4,400 000	Lymphocytes	53 5%
White cells	2800	Mature polymorphs	0 5%
Hæmoglobin	84%		
Colour index	0 95		

The remaining white cells were myelocytes and metamyelocytes with a few hyaline mononuclears

The relation of the onset of neutropenia to the menstrual cycle cannot be ascertained in this case, for the menopause had occurred several months previously

On May 6th her condition was unchanged The temperature varied between 102 4° and 103 4° Six doses, each of 1 c cm of nucleic acid, were injected at four hourly intervals As Vincent's organisms had been found in smears taken from the ulcer, 3 c cm of Stabilarsan were given The next day the patient was definitely worse and the temperature did not rise above 100 8° Difficulty in swallowing had been present for some days but on the seventh was so severe that sips of fluid could not be swallowed The ulceration was extending, but no suppuration occurred The rash was still present on the arms The teeth lateral to the gap formed by the recent extraction were very loose The blood count on this day showed —

Total leucocytes	2000	Lymphocytes	80%
		Polymorphs	5%
		Metamyelocytes	13%
		Large hyaline mononuclears	2%

Bacteriological examination of smears taken from the ulcer showed Vincent's organisms non hæmolytic streptococci *Micrococcus catarrhalis* but no diphtheroids

On the 9th the condition was as before On this day two doses, each of 10 c cm of pentnucleotide were given intramuscularly After the first injection the temperature rose suddenly by 2 6° 0·3 g of novarsenobenzol was also given The fluid intake was kept up to five pints daily almost entirely by the subcutaneous and rectal routes, as not more than a few drachms could be taken by the mouth in 24 hours The next day the same dosage was given three times a day, and this was continued until the 13th The reactions to the injections gradually decreased On May 14th, at the end of the course of pentnucleotide, the temperature was 98 4° and the pulse-rate 88

By May 12th the general condition showed improvement and another count was advised Thus, after four complete days' treatment, was :—

Total leucocytes ..	7000	Polymorphs ..	73 6%
		Lymphocytes	24 8%
		Large hyaline mononuclears .. .	1 6%

The polymorphs are fully mature and granular. This figure includes 3 per cent of myelocytes

Two days after the completion of the course the patient could swallow any liquid form of nourishment. The submental region was still brawny, but the inside of the mouth was considerably cleaner A further blood count showed that the improvement in the blood picture was fully maintained. total leucocytes, 6800, polymorphs, 68 4 per cent. (including a small proportion of myelocytes and metamyelocytes), lymphocytes, 31 6 per cent The general condition remained good On May 17th the ulcer was much cleaner and the slough was being cast off. One loose tooth was removed digitally On the 22nd the patient was able to get up Another count, nine days after the last dose of pentnucleotide, showed. total leucocytes, 7800, polymorphs, 63 5 per cent, lymphocytes, 36 5 per cent

On June 6th two more loose teeth were removed A large piece of bone had become loose, but around it the previously ulcerated surface was rapidly becoming epithelialised Seven days later a large sequestrum was removed under general anæsthesia. This sequestrum measured 1½ by 1 inches, and consisted of the alveolar process and a scale-like flake from the posterior surface of the mandible. On June 17th the patient was discharged The ulcer was completely healed. The patient was seen in September, when she appeared to be in perfect health

The case illustrates the two salient features of this syndrome: severe ulceration of the alimentary tract combined with extreme neutropenia The existence of a previous illness, labelled "influenza," appears to support the theory that some previous toxic process damages the marrow, rendering the tissues extremely susceptible to the slightest infection A history of a previous illness, or infection, is common in these cases, but the type of infection does not appear to be specific. In Pilkington's[5] case the agranulocytosis supervened on lymphadenoma, in another the condition followed measles

My best thanks are due to my late chief and teacher, Mr. Harold C Edwards, surgeon to King's College Hospital, for permission to publish this case and for his helpful interest; and to Dr E ff Creed, director of the pathological department of the hospital.

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THE ORIGIN OF CARDIAC ŒDEMA

By MARTIN O. RAVEN, D M Oxon., M R C P Lond.
PHYSICIAN TO RAMSGATE GENERAL HOSPITAL

THE introduction of the mercurial diuretics, given by intravenous or intramuscular injection, during the last few years (e g, Salyrgan) has produced two remarkable effects upon our approach to chronic heart failure Firstly, it has very largely modified the course of the closing stages of this disease, and secondly, by doing so, it has opened the way to further speculation and research regarding the physical and chemical processes involved

The cases of chronic heart failure here under consideration are not those in which toxic or infective processes (e g, rheumatic infection) directly poison the heart and cause it to fail, but those cases, usually occurring between the ages of 50 and 80 years of age, in which it may be fairly argued that the disabling changes are largely mechanical, whether or no they are the results of fibrosis following from old infections now quiescent Until recent years chronic right heart failure has been one of the diseases involving a great deal of distress and suffering, again and again it has been necessary in a given case to administer morphia to secure relief at night, with the result that the patient has awoken next morning feeling greatly improved but only to fall into another attack of cardiac asthma later in the day, while the continued accumulation of fluid in the body has led to congestion of the lungs and alimentary tract, and to increasing œdema

To-day, under the influence of intensive diuresis obtained by the group of drugs of which salyrgan is one, it is possible to get rid entirely of the excess of fluid from the body by a course of injections, with the result that the condition of the patient is one of comparatively great comfort. The encumbring masses of fluid called œdema are turned out through the kidneys, the breathing becomes easy and free from cardiac asthma, the congestive dyspepsia almost abolished, the appetite often good, and the action of the heart quietened Moreover, under the improved conditions, the digitalis group of drugs is far more easily tolerated by the stomach, and, even where fibrillation is present, these drugs are required in smaller doses or can even be omitted altogether owing to the eased action of the heart Under these conditions it need hardly be added that the disease is deprived of most of its distress

One other condition in the patient is always very prominent in this type of case and that is loss of weight, even to emaciation. Loss of weight should be regarded, of course, as a response to rather than as a symptom of heart failure; naturally the smaller the area the heart has to supply, the greater its relative efficiency, and stabilisation in a case of early failure after the loss of a stone or two in weight is a common observation After effective diuresis by salyrgan the enormous loss of flesh in an advanced case is no longer masked by œdema and is an arresting feature, though it is clear that the comfort of the patient is greatly improved by it.

After tapping of the legs or pleura in right heart failure, patients often ask "where all the water comes from." Our knowledge that it results from passive venous congestion, though correct, does not fully answer the question Surely it is clear that the fluid must come from the rapid breakdown of the body tissues (resulting in loss of weight), pints may be withdrawn from the subcutaneous tissues or serous cavities, and five or six pints may be got rid of by forced diuresis by salyrgan on successive occasions in a few hours, while the patient remains on a dry diet That carbon dioxide is being similarly got rid of is seen in an unrelieved case in the attacks of dyspnœa, and it would be useful to know if the urea output is similarly increased during the phase of rapid loss of weight It seems likely that the products of the enforcedly rapid metabolism (water CO_2 and urea) are represented by excess of CO_2 in the blood (dyspnœa), excess of water in the body (œdema), and perhaps by excess of urea excretion It is very possible also that until the œdema can be got rid of by forced diuresis the process of rapid loss of weight is to some extent held up

It is also very interesting to note that when the mass of œdema has been got rid of, which is usually possible except where the tissues have got over-stretched with the fluid, cessation of the salyrgan injections is likely to be followed by reappearance of localised patches of œdema, often in the flanks or forearms, the localisation no doubt depends on the permeability of the capillaries at the point in question, but the actual new fluid may possibly come from the diet, where the patient has ceased to lose weight We are taught that we all eat far more than is really necessary for our bodily requirements and the appetite of the cardiac patients under salyrgan treatment is often very good That being the case, such foodstuffs as they absorb must either be built up into the body and so cause undesirable gain of weight, or it must be metabolised into water CO_2 and nitrogen, and to find out to what extent the excretions are related to the diet and body-weight in these patients would be an interesting object of research At what point loss of weight becomes incompatible with life under these conditions would be a further question, but it is possible to imagine life able to be prolonged to an indefinite period if stabilisation of weight could be balanced by a minimum of diet and exertion

In one other condition the salyrgan group of drugs is also very useful, and that is in pulmonary œdema Here no doubt they act in the same way as a venesection Pulmonary œdema is said to be due to the right heart acting well while the left heart is failing, and venesection or forced diuresis probably acts by depriving the right heart, so to speak, of its ammunition At any rate, effective diuresis by this method is very useful in preventing attacks of dyspnœa due to acute or subacute pulmonary congestion in heart failure, and its action must be one of removing excess of fluid from the circulation Possibly the use of these drugs may before long become so much a matter of routine that they will be used on all occasions to prevent rather than to relieve cardiac œdema Cardiac œdema, in short, may come to be a symptom that should not be allowed to arise

CLINICAL AND LABORATORY NOTES

A SPECIMEN OF THE ACCESSORY LOBE OF THE AZYGOS VEIN

By E E Atkin, M B Camb
DIRECTOR OF THE PATHOLOGICAL DEPARTMENT HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST BROMPTON LONDON

ALTHOUGH radiology has taught us that the congenital anomaly known as the accessory lobe of the azygos vein is not a great rarity, it is extremely seldom that one has the good fortune to obtain a specimen for the museum An opportunity however has recently occurred in the post mortem room of this hospital, and since the radiogram of the abnormality taken during life is also available it seems well worth recording The patient was a man aged 60 who died from bronchial carcinoma of the opposite side Fig 2 shows the accessory lobe in situ with the fold of parietal pleura protruding from the fissure separating it from the right upper lobe In Fig 3 the accessory lobe has been drawn aside in order to show the disposition of the double fold of parietal pleura The free border of the latter can just be seen with the cut end of the vena azygos major in which a probe has been inserted There are slight adhesions to the apex of the upper lobe Fig 4 is a back view of the same

The abnormality was first noticed by the anatomist Wrisberg, and curiously enough his case exhibited accessory lobes of the same type in the upper lobes of both right and left lungs Since then the bilateral anomaly appears only to have been reported once M Déré[1] gave the first hint of the accepted explanation of its ætiology A clear detailed description was given a short time ago by H P Nelson and G Simon[2] so that it will suffice here to recall the salient points Owing to an abnormal position of one or other of the relevant structures in fœtal life the azygos vein with its attendant fold of parietal pleura cuts a deep fissure in the right upper lobe during development

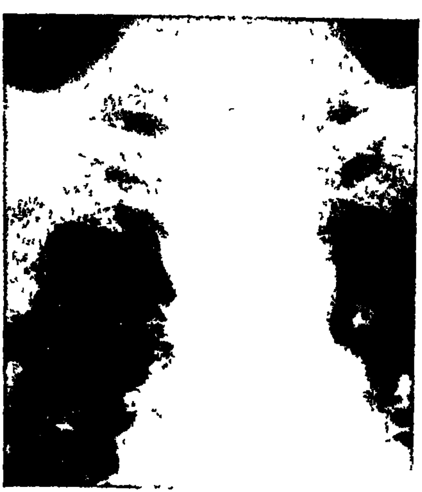

FIG 1.—A negative radiogram showing the comma-shaped shadow at the apex of the right lung cast by the accessory lobe

The essential feature of this accessory lobe of the azygos vein is that a *double layer of parietal pleura* with the azygos vein in its free border dips down to the bottom of the fissure which separates it from the

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[1] Bull et mém Soc Anat de Paris 1899 lxxiv 839
[2] Brit Med Jour, 1931 i 6

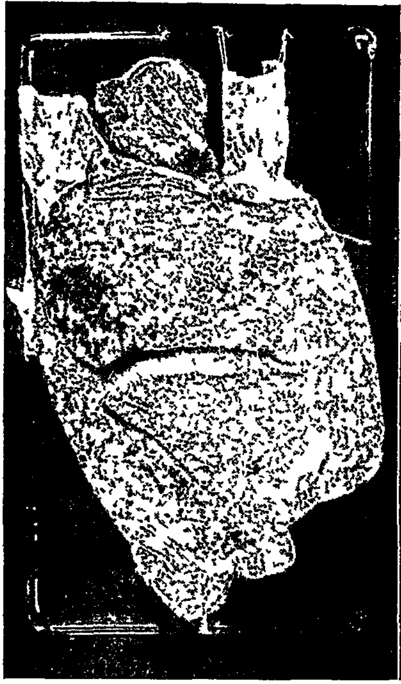

FIG 2—Accessory lobe of the azygos vein, in situ

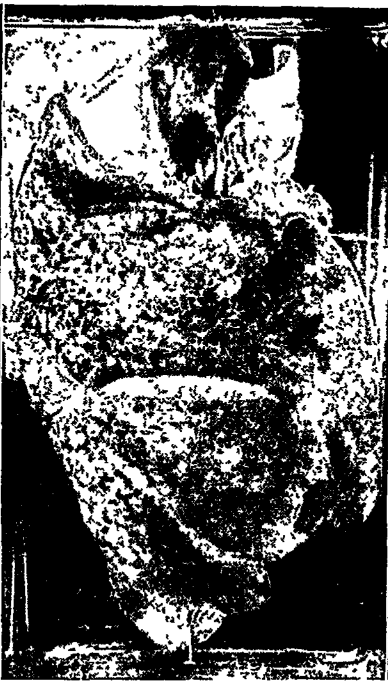

FIG 3—Accessory lobe retracted to show the fold of parietal pleura and the vena azygos major

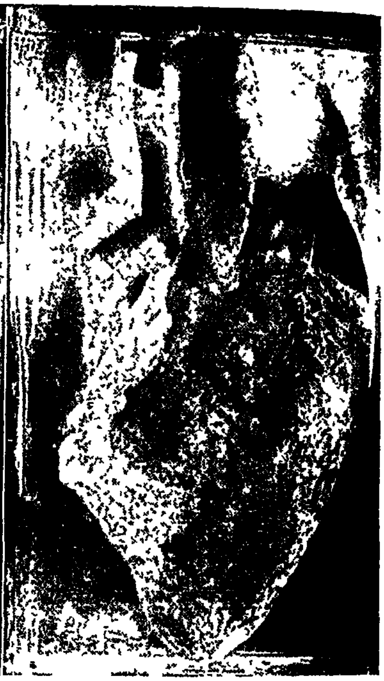

FIG 4—A back view of the accessory lobe

rest of the upper lobe. This pleural fold has been aptly termed the meso-azygos The abnormality, therefore, is sharply marked off from other supernumerary fissures which occur in the lung, since the latter are lined only by the visceral pleura attached to the lung.

The characteristic radiological image is now too well known to need description. That of the present case will be seen in Fig 1

I am indebted to Dr R W Rawlinson for permission to use the radiogram and to Mr G Siddall for the negative print of it

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CONTROL OF MEASLES

BY G. HALE, M B. Camb.

LATE HOUSE PHYSICIAN TO THE VICTORIA HOSPITAL FOR CHILDREN, LONDON

DURING the latter part of the biennial epidemic of measles in 1931–32, the wards of the Victoria Hospital for Children were kept open by the use of either convalescent or adult serum, whichever could be obtained There were three wards each of 18 beds, and the period covered was February to July Susceptible children who came in contact with measles while in the wards received an intramuscular injection of serum within the first five days of incubation, complete protection being the objective Susceptible children known to be contacts were not admitted.

A sliding scale of dosage was used—a minimum of 5 c cm, plus 1 c cm for each year of life—but in a few cases it was not strictly followed As time went on it became increasingly difficult to obtain either adult or convalescent serum, and in two cases the serum of parents was used

The parents of the contact were sent for and the position was explained to them If they had had measles about 50 c cm of blood was withdrawn from one of them, and as soon as the serum had separated from the clot an injection was given to the child In deciding whether to take blood from one parent rather than the other, preference was given to the one who had had the more recent attack If he or she had had two or more attacks this was taken as a sign of poor immunity General physical fitness was taken into account, and other things being equal the

Convalescent Measles Serum

Date in 1932	Sex	Age	Dose in c cm	Day of inc	Result
March 19	M	9 yrs	10	4	Protected
May 6	M	3 ,,	8	5	,,
,,	F	6 ,,	11	5	,,
,,	F.	6 ,,	11	5	,,
,,	M	2 mos	5	5	,,
,,	F	20 ,,	5	5	,,
,,	M	3 ,,	5	5	,,
,, 14	M	21 ,,	5	2	Measles developed after discharge on May 31, attack said not to be severe
,, 18	F.	11 ,,	3	2	Protected
Adult Measles Serum					
April 20	M	9 yrs	13	4	Protected Had had 10 c cm convalescent serum on March 19
,,	F	5 ,,	11	4	Died of T B meningitis April 23
,,	F	5 ,,	10	4	Protected
,,	M	7 wks	5	4	,,
,,	M	5 mos	5	4	,,
,,	F	11 yrs	16	4	,,
,,	F	4 ,,	9	4	,,
,,	F	ks	5	4	Died of congenital syphilis April 21
,,	F	7 yrs	12	4	Protected
,,	F	4 ,,	5	4	,,
,,	F	18 mos	5	4	Developed measles May 2 Rash and fever only lasted 24 hours No Koplik's spots
Parental Measles Serum					
May 14	F.	2 yrs	10	2	Protected Pertussis, May 29
,,	F	4 ,,	15	2	Measles May 16 (note date) Fever lasted 3 days, some bronchitis

Inc = incubation

younger parent was preferred No Wassermann or other test was performed, but it was explained that syphilis contracted after the birth of the child might be transmitted by the injection If any parental serum was left after the child had had the injection, a Wassermann test was done and it was put into ampoules for later use In the two cases treated the dosage used was as then advised by the public health department of the London County Council Up to the age of three years it was 10 c cm , from three years onwards the number of cubic centimetres to be given was calculated by multiplying the age, in years, by four

There seems to be no reason, in the ordinary way, why parental serum should differ at all from mixed adult serum , though presumably the results are not likely to be so uniformly good

The value of protecting susceptible cases in hospital from measles is obvious from the accompanying Table, and the method is widely practised The principal objections to its application in private practice are (1) that few children are taken to the doctor during the incubation period , and (2) that the serum is hard to get The first of these difficulties can only be overcome by wider knowledge of preventive medicine among the public, or conceivably by compulsory notification of all cases and the tracing of contacts The second is really no difficulty at all, provided one of the child's parents has had measles It should not even be necessary to prepare the serum for a direct injection of whole blood from the parent should be quite as effective as an injection of serum, provided allowance is made for the volume of the clot in estimating the dose

In private practice there is no object in protecting all measles contacts and leaving them susceptible again in a few weeks , but there is every reason to modify the attack by giving the injection between the sixth and the ninth day of incubation, thereby insuring against complications, severe illness, or even death

I wish to thank Dr R C Jewesbury, Dr A C D Firth, and Dr S Wyard for allowing me to publish the results obtained in their wards, and for their help On behalf of the Victoria Hospital I wish also to thank Dr D N Nabarro, of the Hospital for Sick Children, and Dr H K Goadby, of St Thomas's Hospital, for supplying the convalescent serum , and the public health department of the London County Council for the adult serum

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ERRATUM —In the study last week of basal metabolism and impedance angle, by Dr J D Robertson and Dr A T Wilson, an unfortunate misprint occurred The sentence in parentheses halfway down the second column, page 1158, should read (It must be noted that in our experience cases of moderate Graves's disease often show I.A values which are well within *normal* limits)

MEDICAL SOCIETIES

TUBERCULOSIS ASSOCIATION

For his presidential address to this association on Nov 23rd Dr L S T BURRELL chose the subject of

Reinfection in Tuberculosis

We ought to be able to agree, he said, whether or not tuberculosis is infectious A man says to the consulting physician "My son wants to share a small flat with a friend who is consumptive and has tubercle bacilli in his sputum , shall I allow it ?" Most of us would advise that there was danger, slight but none the less definite Some authorities, however believe that there would be no danger for they regard the ordinary so called adult type of pulmonary tuberculosis as a late manifestation of a previous infection just as tabes dorsalis or aneurysm are late manifestations of syphilis They justify this theory by citing Koch's phenomenon—i e the change that takes place in the body as a result of infection When tubercle bacilli enter the body of an animal for the first time nothing happens until after some days, when a nodule appears and the corresponding lymph glands soon become enlarged If however the bacilli enter a body that has previously been infected there is a local inflammatory reaction and general shock which may kill the animal but if not the bacilli appear to be fixed at the site of entry where they may be destroyed It has therefore been suggested that there is a primary tuberculosis due to the first invasion of the body by tubercle bacilli, and that if recovery takes place the body is immune to a second invasion If this theory is correct it follows that when once an individual has been infected by tuberculosis that is to say as soon as he reacts to tuberculin, he need take no precautions as regard contact with the so called "open" cases of consumption This seems to me said Dr Burrell a very dangerous doctrine to preach I suggest to you that all forms of tuberculosis after the incubation period are fundamentally the same Imagine that on testing 100 people with tuberculin one finds 90 reactors They react because they have been infected The result of a primary infection is to produce sensitivity or a state of allergy In the overwhelming majority of cases the infection is not large enough to produce any definite symptoms and the patient becomes allergic without any sense of illness Sometimes the dose of infection is sufficient to produce symptoms from which the patient recovers, and in a few cases it is sufficient to cause a general and fatal tuberculosis

With this introduction, Dr Burrell submitted and *justified the following 21 articles* —

1 The human body has some degree of natural resistance to infection by tubercle bacilli

2 This resistance is less than that of some animals and more than that of others

3 Some individuals are more resistant than others

4 The degree of resistance varies from time to time in the same individual

5 Small repeated doses or a chronic lesion lead to tolerance to the tuberculous toxins

6 A primary infection leads to a state of allergy which may be harmful if too great but in a moderate degree produces an acquired resistance

7 As with natural resistance the degree of acquired resistance and *tolerance* varies in different species and waxes and wanes in the same individual

8 Natural resistance is strong enough to overcome an ordinary dosage of infection, so that the overwhelming majority of individuals overcome an initial infection without any clinical disease or even any signs of ill health

9 Acquired resistance is not nearly so important as natural resistance, so that when once the natural resistance breaks down the acquired resistance alone is rarely sufficient to check the progress of the disease Tolerance merely prevents infection from producing *toxic symptoms*

10 An important factor in acquired resistance is to fix the invasion and so to slow down its rate of *spread* This tends to make tuberculosis a local disease, spreading chiefly by local extension,

11 As a result of this check natural resistance has time to overcome those bacilli which wander from the local lesion and often to overcome the local lesion itself

12 The change which takes place in the body some days after infection by tubercle bacilli may be *compared to the* change which takes place after infection by typhoid bacilli when the Widal reaction develops If in either of these diseases one wants to speak of a primary stage, it should

be the incubation or pre-allergic period. After this brief latent period all tuberculosis is essentially the same

13 It is wrong to apply the word primary to a tuberculous *manifestation merely because it is the continuation* of an original infection, and secondary because there has been a latent period between the original infection and the onset of symptoms

14 It is not true that the individual acquires immunity to tubercle bacilli from another host but remains susceptible to those harboured in his own body,

15 In common with all infections, a slowly spreading lesion produces fibrosis and a rapidly spreading one does not

16 Repeated small infections therefore are either overcome by the combined efforts of natural and acquired resistance, or local areas of fibrosis appear and lead to the so-called chronic fibroid type

17 In the rare event of an overwhelming infection, *endogenous or exogenous, an acute tuberculosis occurs*

18 In human beings as in animals the fatal dose has some relation to the weight of the individual. Hence a dose that would prove fatal in an infant might be resisted by an adult.

19 The site of the lesion is a matter of great importance in prognosis. If the bacilli happen to get fixed in the *meninges the result is fatal, if they happen to lodge in the* elbow recovery is the rule

20 Pulmonary tuberculosis is common in adults and non-pulmonary in children because the bacilli, having reached the blood stream, must go through the lungs In the child the passage through them is easy, whereas in the adult they meet obstruction and tend to become fixed *Children have as much resistance to tuberculosis as adults* have

21 Infantile and adult tuberculosis are fundamentally the same

Let us not, he concluded, regard tuberculosis as a disease apart from others. Certainly it differs from *them and has its own peculiarities, but it obeys* the same laws of nature that apply to other infections as regards its infectivity and other poisons as regards its toxicity Differences are a matter of degree only in this problem A patient who expectorates sputum containing tubercle bacilli is a danger to others If reasonable precautions are taken this danger may be so slight as to be negligible, because these precautions will prevent a contact from receiving a dose large enough to infect A massive dose will produce an acute type of tuberculosis and repeated small infections a chronic one.

Dr G T HEBERT read a paper on the

Termination of Artificial Pneumothorax

It might be argued, he said, that it was better and safer to continue a pneumothorax for a year or more beyond the time when the treatment appeared to have served its purpose, but if it was admitted that the treatment exposed the patient to certain risks and that the shorter the treatment the better would be the *restoration of function in the treated* lung, *then there was justification for considering* how soon the pneumothorax could safely be terminated He thought, indeed, that in the past they had erred on the side of caution, and that many cases might have been terminated much sooner In a considerable number of cases the physician had no choice—the termination was premature or unavoidable in about 50 per cent. of cases The main reasons for forced termination were · (*a*) obliteration, usually following an effusion, (*b*) spread of disease in the better lung, (*c*) *pleuro-pulmonary fistula, and* (*d*) *personal reasons* In an analysis of 210 cases at St Thomas's Hospital these reasons were operative in 21, 19, 3, and 8 per cent respectively *in the "unavoidable" group* In the "optional" group, treatment was terminated in 10 per cent in whom the object aimed at was not obtained, and in 39 per cent. in which it was attained. The possible effects to be produced by collapse were: (1) the formation of fibrous tissue; (2) the reduction of toxæmia, (3) the checking of spread of the disease, (4) the closure of soft cavities, and (5) the cessation of recurrent or of urgent hæmoptysis He could give instances of cases in which one predominant effect was obtained by collapse, and, he thought, by collapse alone Usually two or more of these desired effects were aimed at, and the treatment could not be considered a success unless they were obtained. When this point had been arrived at, a certain period had to be allowed for healing. The results of routine *sanatorium treatment tended to show that* patients who remained well for two years after the completion of the treatment did not often suffer a relapse The *period of healing should continue until it* was judged that the lung in the expanded state could stand the strain of a reasonably active life Dr. Hebert suggested that this period was only in exceptional cases less than one year; that it took from one to two years in the type of case most suitable for the treatment; and that collapse should be maintained for more than two years in severe cases, the severest requiring perhaps permanent collapse But the period of healing depended mainly on the rate at which the desired effect was obtained and the type of lesion to be treated The blood sedimentation-rate was a useful factor in assessing the progress of healing, it should preferably have been normal for at least six months before treatment was terminated When the desired effect was not obtained after a reasonable trial, the treatment should be stopped This applied particularly to those cases where a cavity could not be collapsed, where intractable adhesions prevented *adequate relaxation of the lung, or where toxæmia* persisted In such cases the treatment might actually be harmful, and the sooner it was abandoned the better.

MEDICAL SOCIETY OF LONDON

AT a meeting of this society on Nov 26th, with Lord HORDER, the president, in the chair, a discussion on the value of accessory methods in the

Diagnosis of Intracranial Tumours and Allied Conditions

was opened by Mr HUGH CAIRNS These methods he classified as. examination of the cerebro spinal fluid for pressure, histology and chemistry; radiological examination; ventriculography and encephalography, ventricular estimation, cerebral endography, *by means of iodoventriculography* or exploratory brain puncture, electrical resistance methods, and other methods He stressed the importance of regarding all accessory methods as adjuncts to the clinical investigation, their value, he said, depended on the assiduity with which clinical study was pursued Of lumbar puncture he merely inquired whether it was dangerous, and suggested that its chief danger lay in the habit of taking too much fluid He showed a few slides of the appearances which could be obtained by plain radiography, and passed on to consider ventriculography, by which air was introduced into the ventricles in order that their inflated *shape might indicate the position of the tumour.* The air had formerly been introduced through the spinal column, but the method now in use was to make small burr-holes in the skull and introduce it through needles Mr Cairns showed several radiograms of the normal skull to illustrate the symmetrical manner in which the ventricles were inflated. Good pictures ould, he said, be obtained by the introduction of 0-70 c cm. of air, without distressing the patient n a large series of slides of pathological cases he demonstrated the infinite vagaries brought about in he shape of the inflated ventricles by tumours of various kinds and in various positions Almost every umour, he explained, caused some deformity Tumours in the neighbourhood of the ventricles would produce deformities of their surface and tumours in the cerebral hemispheres would bring about a great displacement of the lateral ventricles to the opposite side The position of the septum pellucidum was particularly important, and the neurologist relied above all on the antero posterior view The appearance of veins and markings sometimes assisted, for the position of the tumour was not always obvious from the difference it made to the walls of the ventricles—e g , partial obstruction due to swelling of a callosal gyrus might dilate a ventricle It was usual for a certain amount of air to pass from one lateral ventricle to the other In one unusual case where no air had passed from right to left, there had been a tumour of the septum pellucidum and adjacent parts, bulging up between the ventricles Blockage of air might be caused by an obstruction of the foramen of Munro on the opposite side or by a tumour of the third ventricle blocking both foramina of Munro It was sometimes possible to distinguish the state of affairs by means of a stereoscopic picture A foramen blocked to air might be patent to fluid A considerable gap instead of the usual thin line between the lateral ventricles might be due to a tumour of the corpus callosum and a hemisphere pressing down between them The method was especially useful for tumours of the third ventricle, the diagnosis of which was very difficult from localising signs

In conclusion, Mr Cairns said that the limitations of the method were that it would not always show diffused tumours such as gliomatosis or sarcomatosis, though it would show nearly every operable tumour Non surgical lesions, such as those of encephalitis, would sometimes produce deformity of the ventricles Moreover, the method would not give the pathological diagnosis Its advantages were that it saved operative exploration in a number of cases with tumours and gave more information It had its uses in the post operative period, as for detecting remains of an incompletely removed growth It had its dangers, for although air could be safely injected into a normal skull, a brain with a tumour was sometimes vulnerable The chief danger was in the general reaction If untoward symptoms occurred, the air should be released and operation performed immediately, the radiography should be done early in the morning and the operation performed as soon as plates had been read Ventricular estimation was carried out as a routine in his hospital in every case, and its results often corrected those of ventriculography

A critical examination of the value of various methods used on Mr Cairns's 1933 material had shown major operations for intracranial tumour in 120 cases, air injection in 42, ventricular estimation in 27, and an arteriogram in 1 Diagnosis had therefore been checked in something like 68 cases The tumour had been wholly or partly removed in 94 cases In 11 other cases the lesion had been identified but no pathological material had been taken During the year there had been four gross mistakes in diagnosis. The tumour could have been correctly localised by clinical methods alone in 105 of the cases. In 20 the clinical examination had not given a certain localising evidence; in 4 it had given a wrong localising diagnosis Radiological examination had provided crucial diagnostic evidence in 3 cases and important confirmatory evidence in others, and false localising signs in 3 Air injection had been the main factor in 15 and ventricular estimation in 5 cases The next important step was to provide pathological diagnosis The future lay in more careful clinical examination and further experience.

Dr J G GREENFIELD, describing the results of examination of the cerebro-spinal fluid in cerebral tumours and abscesses, said he had been struck by the great variations from the typical findings in cerebral tumours These, however, were not sharply enough defined for the practical requirements of the general doctor and consultant The only points necessary to examination were pressure, appearance, cells, and total protein The typical syndrome of cerebral tumour consisted in increase of pressure without increase of cells Accurate estimation must be made with a manometer and the pressure must be reduced very quickly and only to a limited extent The very fine needle used was removed when the pressure had fallen to about two thirds of the original The normal mean was about 130 mm , and pressures above 200 mm were definitely abnormal and might quickly rise to over 300 mm They were often found before any evidence of papillœdema, headache, or vomiting Normal pressures might be found with cerebral tumours and abscesses and in subdural hæmatomas, for a tumour might find quite a large amount of room vacant for its growth before it caused overcrowding, and secondary cancers, degenerating gliomas, and tuberculomas of the cerebral hemispheres might destroy almost as much brain tissue as the space they occupied Cerebral tumours as a rule produced no increase of cells, with the exception of gliomas, especially degenerating glioblastomas in the walls of the lateral ventricles These sometimes produced cells in large numbers with a significant proportion of polymorphonuclears which might make the fluid turbid and suggest a diagnosis of abscess The other exception was cancer of the posterior fossa, where actual tumour cells might be found in addition to other cells Primary tumours of the cerebellum or of the VIIIth nerve, on the other hand, did not produce an excess of cells. Excess of protein was found in VIIIth nerve tumours and cancers of the posterior fossa but not in slow growing cerebellar gliomas and gliomatous cysts, or angiomatous cysts of the cerebellum It might be unwise to operate when yellow, highly proteinous fluid was found, but with a lesser degree of excess it would be unwise to draw any conclusion

Dr M H JUPE emphasised the necessity for combining all the methods In showing examples of routine radiograms he dealt particularly with the meningiomas which exacted most work and for which the surgeon was most likely to turn to the radiologist for help Open sutures he demonstrated, sometimes showed a general rise of pressure Meningiomas were extraordinarily interesting and complex, because they caused so many different types of evidence Some of them calcified, some caused hyperostosis, some destruction and some a combination of both and some were betrayed by a dilatation of the vessels

Dr IGNATIUS OLJENICK (Amsterdam) then spoke of ventricular estimation which had been introduced in order to reduce as far as possible the mortality from the older methods The ventricles were punctured through burr holes and the fluid from the two sides was examined chemically and microscopically, and the pressure on the two sides measured by a manometer Symmetrical conditions in the two lateral ventricles meant that the obstruction must be in the medium part of the system. Asymmetry denoted that the tumour was not in the third or fourth ventricle, nor in one of the cerebellar lobes, so that the old mistake of confusing a left frontal with a right cerebellar tumour was obviated Another advantage of the double puncture was that in many cases it was impossible to reduce the intercranial pressure before opening up the dura, where the anterior horn could not be found at the site of operation. With a contralateral burr-hole, it was possible to reduce the pressure without injecting saline The lesions which presented most danger were those of the temporal lobe, because there was no falx cerebri to act as a buffer to prevent a cerebral shift, with consequent damage to neighbouring tissue Ventriculography was followed up immediately by operation.

Dr C. P **Symonds** remarked that the work had opened up not only a new avenue of treatment but new powers of location Neurologists owed much to surgeons and had more to learn from them

Mr **Julian Taylor** showed slides of characteristic annular shadows, one of which had been the sign of an aneurysm of the carotid artery, and the other of an endothelioma on the left side of the brain.

Mr **Cairns**, in reply, recalled that Gowers, writing in 1893, had doubted whether a patient could ever survive the removal of a brain tumour He looked forward to means of separating operable from inoperable tumours

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Gee's Disease.—In the discussion on this subject reported in our last issue Dr. Edward Harvey is incorrectly credited with a statement that rabbits put on a diet of rice developed many of the symptoms of cœliac disease. Dr. Harvey informs us that Sir Robert McCarrison's observations, to which he referred, were made on monkeys and pigeons, not rabbits.

MEDICINE AND THE LAW

Obstructing a Coroner

There was a conviction last week at Manchester assizes on the unusual charge of obstructing a coroner in the execution of his duties Arthur Mason was charged with the murder of his daughter who was 2½ months old His wife, also charged, had died in gaol while awaiting her trial The child had been born in hospital, there was evidence that the mother, when she came home afterwards, was not strong enough to nurse it and that she spoke of sending it to a home The mother suffered from tuberculosis and the child was weakly Mason's account of the case was that, when the child disappeared, he thought it had been sent to a home, later he discovered the remains of the body under the bed and his wife told him she had burnt some of it She begged him not to tell anyone and after a few minutes he put the body on the fire Dr. William Susman, lecturer in morbid anatomy at Manchester University, described fragments of bones produced in court as those of a human infant. He showed the jury certain cuts on the tibia; all the cuts, he said, had been made at the same time; only a saw could have made them, a saw produced in court fitted the cuts He definitely stated that the cuts had been made when the child was alive The judge told the jury that a barbarous and wicked murder had been committed and that the possible culprits had been reduced to two, Mason and his dead wife Mason was found not guilty of murder but was tried again next day on the charge of obstructing the coroner by preventing him from holding an inquest He pleaded guilty The judge passed a nominal sentence of imprisonment, which meant that Mason was forthwith released. The court took the view that Mason had been obliged to choose between giving his wife up for trial on what might be a charge of murder and on the other hand doing what he could to shield her from discovery.

The best-known cases of obstructing a coroner are those of Price and of Stephenson, both cases of burning a body and both tried in 1884 A trial for the same offence, where the body of an infant was not burnt but was thrust into a hedge, ended in the quashing of the prisoners' convictions in the Court of Criminal Appeal in May, 1933 (*R. v Purcy*); it was not clear in that case that there had been any necessity for a coroner to hold an inquest on the body, the child having died from natural causes though there was a suggestion of neglect.

Error in Dispensing Prescription

At an inquest at Sutton upon the death of a patient for whom his medical attendant had prescribed tincture of opium, it appeared that the dispenser had misread a drachm as an ounce in making up the medicine The practitioner, in giving evidence, said that in no circumstances would he prescribe more than one drachm *for* one patient The dispenser stated that it had not occurred to him to refer to the doctor on reading the item as one ounce inasmuch as he did not know whether the prescription was for one person or more. The coroner suggested that all doctors should take special care when writing amounts in prescriptions, an exhortation with which nobody will quarrel He also suggested that dispensers should keep in touch with the doctors they serve in any case where there was the slightest cause for doubt about the items of a prescription This too is sound advice, especially in these times when telephonic communication facilitates prompt verification. The lay public has been known to suspect that the medical profession deliberately adopts an undecipherable script in order to prevent the disclosure of esoteric mysteries. The instances of serious failure on the part of a dispenser to decipher a prescription are nevertheless rare In the case at Sutton the doctor was asked if his handwriting had been questioned before, he admitted the fact This, if known, would seem to put the dispenser all the more upon inquiry *It is a prima facie* inference that medicine is prescribed for one patient rather than for a whole household

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Fellowship of Medicine and Post-Graduate Medical Association.—A course in chest diseases will be held at the Brompton Hospital on Wednesdays and Fridays from Dec. 12th to Jan 11th (excluding Christmas week) at 5 P M Courses for the new year are being arranged as follows cardiology at the National Hospital for Diseases of the Heart, Jan. 14th to 25th urology at St Peter's, Jan 21st to Feb 2nd, a week-end course in diseases of the heart and lungs at the Royal Chest Hospital, Jan 19th and 20th, a course in manipulative surgery, Jan 29th to Feb 1st, a series of surgical tutorial classes on Tuesday and Thursday evenings at the National Temperance Hospital, and a series of demonstrations at the Wellcome Museum of Medical Science on Thursday afternoons. Full details of all these courses which, except the cardiology course, are open only to members and associates of the fellowship, will be available shortly from the Secretary of the fellowship, 1, Wimpole-street, W.1.

REVIEWS AND NOTICES OF BOOKS

Clinical Toxicology

By ERICH LESCHKE, Professor of Internal Medicine in the University of Berlin Translated by C P STEWART, M Sc , Ph D , and O DORRER, Ph D London J and A Churchill 1934 Pp 346 15s

2 Industrial Toxicology

By ALICE HAMILTON, M D New York and London Harper Brothers 1934 Pp 352 12s 6d

3 Handbook of Medical Jurisprudence and Toxicology

Seventh edition By WILLIAM A BREND, M.A , M D , B Sc , Lecturer on Forensic Medicine, Charing Cross Hospital London Charles Griffin and Co , Ltd 1934 Pp 325 10s 6d

1 MOST works on toxicology published in England or America are written by experts in medical jurisprudence or pharmacology whose occupations debar them from the actual treatment of cases The practical inexperience of the authors is probably one of the reasons for the lack of general knowledge in the profession about the treatment of acute poisoning This manual is therefore refreshing in that it is written by a clinician with the definite aim of helping the practising doctor This aim is in the main fulfilled, though some of the common failings of textbooks on toxicology—for example, the omission of a description of the technique of the stomach wash out—are not repaired Prof Leschke's preference for Silvester's method of artificial respiration is hard to understand, the prone position of Schäfer's method and its greater efficiency and ease of performance make it in the opinion of most experts unquestionably superior to Silvester's method An interesting point is the author's high opinion of coramine as the best stimulant in cases of poisoning producing coma He advises doses of 5 to 15 c cm administered intravenously This view is opposed to that of American authorities, such as Haggard and Greenberg, and many French writers who pin their faith to large doses of strychnine For strychnine poisoning Prof Leschke recommends intravenous injection of pernocton as the most effective procedure, this drug is certainly most valuable in controlling violent delirium and mania from various causes Prof Leschke's work is an important addition to the literature of toxicology and its translation is well done

2 Dr Hamilton's long experience of industrial toxicology gives authority to this work and to her plea for more attention to its preventive aspects She states with vigour the duty of the State the employer, and the physician alike to protect the health of workers in the poisonous trades since the knowledge to enable them to do so is available Her book should be studied especially by medical officers of health The paramount danger from the inhalation of poison in contaminated air—is registered in the pertinent observation that the great majority of the industrial poisons enter the body with the inspired air, and that while a workman eats only three times a day he breathes 16 times a minute The principal causes of poisoning in industry are considered in turn Dr Hamilton states the facts known about each particular hazard concisely and clearly In the bibliography 655 references are listed, all being relevant indeed for proper documentation In regard to carbon monoxide poisoning Dr Hamilton has much to say that is probably new to the unspecialised reader Apparently 0 04 per cent breathed for several hours causes malaise, 0 1 per cent causes 50 per cent saturation of blood in 15 minutes; 1 per cent causes immediate unconsciousness The multiple opportunities for gassing in modern life are shown by the fact that illuminating gas, coal gas, smoke from blast-furnace stacks, and fumes following dynamite explosion all contain 20–40 per cent CO, and that exhaust gas from motor-cars averages 7 per cent CO It is time that the widespread occurrence of this asphyxiant and its menace to well being and life should be more generally realised The monograph is a valuable contribution to the literature of toxicology and public health

3 In the seventh edition of Dr Brend's well-known handbook the chief changes relate to new Acts The Mental Treatment Act, the Dangerous Drugs Act, and the Pharmacy and Poisons Act are adequately considered in so far as their provisions affect medical practitioners The second part of the book is devoted to toxicology and follows the same pattern as did previous editions Here again a full description of the procedure of gastric lavage would have been valuable It is unsafe to assume that students know how to perform a stomach wash out Many lives must be lost every year in cases of poisoning through gastric lavage being attempted without precautions in unconscious patients whose cough reflex is abolished An exact description of the proper position of the patient under such circumstances should figure in all elementary expositions of the therapeutic aspects of toxicology A full account of Schäfer's method of artificial respiration might also be incorporated with advantage The statistical tables of deaths by poisoning show that carbon monoxide outnumbers all the other poisons combined as a cause of death Yet treatment of carbon monoxide poisoning is dismissed in six lines On the whole however, the book may be strongly recommended as a compact presentation of the important aspects of medical jurisprudence and toxicology

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Introduction to Physiological Chemistry

Third edition By MEYER BODANSKY, Ph D , Director of Laboratories, John Sealey Hospital, Galveston , and Professor of Pathological Chemistry, University of Texas New York John Wiley and Sons, Inc ; London Chapman and Hall Ltd 1934 Pp 662 25s

Prof Meyer Bodansky's book ranks as one of the most complete introductions to the *subject of bio* chemistry as a whole that has been published, and it has deserved its remarkable success In this edition the whole of the subject matter has *been brought* up to date and certain additions have been made particularly in the sections on enzymes the *metabolism* of muscle vitamins and the hormones Good as is the chapter last named, a more detailed discussion would have been welcome, the description of the sex hormones is not up to the standard of the rest of the work and might almost be called too American in outlook For example, the mass of continental work on the male sex hormone is hardly *referred* to and the various factors leading to the adoption of the present formula for the œstrus-producing hormone are not given clearly. Some reference should surely have been made to the large number of œstrus-producing substances occurring in the urine of the pregnant mare, and also to the recent synthetic work in this field. The anterior lobe of the pituitary is dismissed in a mere two pages, one of which is devoted to a description of acromegaly and gigantism, and there is only a passing reference to the recent work on the thyrotropic, adrenotropic, and other stimulating hormones from this lobe The work of Collip and his co-workers on the conception of antihormones should at least have been mentioned

In some respects the chapter on vitamins is also disappointing; for example, greater stress might have been laid on the relationship between the flavine group and vitamin B_2 It is, of course, easy to pick out flaws in any comprehensive work, and these are indicated only in the hope that these sections may be expanded in his next edition Prof Bodansky has supplied one of the finest text-books on biochemistry in the English language, and all who wish to obtain a thorough knowledge of the subject should buy and study it.

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1 The Mothercraft Manual

Ninth edition By **Mabel Liddiard**, S R N., Matron, Mothercraft Training Society London: J. and A. Churchill Ltd 1934 Pp. 195 3*s*. 6*d*.

2. Mothercraft

By M. **Truby King** Sydney and Melbourne: Whitcombe and Tombs Ltd.; London: Simpkin Marshall Ltd. Pp 252 3*s* 6*d*

1 This manual continues to be a best seller In small compass Miss Liddiard has contrived to present the whole art of bringing up a baby on the lines laid down by Sir Truby King and practised under her own direction as matron of the Mothercraft Training Society The chapters on natural and artificial feeding deserve special mention for their detailed instructions and carefully prepared tables both for feeding and weaning. Disciples of Dr. H K Waller, who allows his babies to hold and bite at a piece of beef-steak at nine months, may, however, question whether the manual does not keep the child rather too long on a babyish régime, no meat being included until the age of two years Miss Liddiard's directions for the management of premature infants combine scrupulous care with an absence of fussiness which is wholly commendable In fact a feature of the whole book is its cheerful and optimistic tone A short section on the older child contains useful hints, and a miscellaneous chapter deals helpfully with various matters such as the feeding of twins, children in the tropics, on a sea voyage and on a railway journey, and the right way to plan a family holiday The alterations and additions in this edition have mostly been suggested by readers

2 Miss Truby King has written this book in order to provide mothers and nurses with an inexpensive and up-to-date handbook on the rearing of children by her father's methods She writes from the Australian Mothercraft Society, and is addressing herself to women who enjoy some leisure, for they are told. "Take at least half an hour's rest with the feet up after each meal, and whenever you *feel tired*," and one of the reasons given for advising mothers to be delivered in a hospital or maternity home is that "a hospital confinement relieves the mother of all household cares" In this country it is the weight of household cares which prevents many women from availing themselves of institutional provision The Truby King *system of child management* is set out in considerable detail, and the print is good, though rather overloaded with heavy type

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The Diabetic Life

Eighth edition. By R. D. **Lawrence**, M A, M D, F.R C P Lond, Physician in charge Diabetic Department, King's College Hospital, late Chemical Pathologist and Lecturer in Chemical Pathology, King's College Hospital London: J. and A Churchill. 1934. Pp. 224 8*s*. 6*d*.

Only a year has elapsed since the last edition of this book was published. Little change has been made in the text, but the advice on the amount of carbohydrate to be allowed to the diabetic has been altered Dr. Lawrence has now increased the carbohydrate ration, but regards 150 g. as the maximum; he does not favour very high carbohydrate values of 200–400 g used by some workers. An announcement is made in the preface that a diabetic association has been formed in this country to look after the personal and social interests of diabetics and to promote new research on the disease, and the hope is expressed that all readers of the book will join the association.

Practical Histology

For Medical Students Third edition By D. T **Harris**, M D., D Sc, F Inst P, Professor of Physiology, London Hospital Medical College. London. H. K Lewis and Co, Ltd 1934 Pp 36. 7*s* 6*d*.

This is a very useful laboratory manual, and contains just that miscellaneous assortment of information which is of use in everyday histological routine It is not in any sense a text-book, explaining in detail neither histological technique, nor the microscopic appearance of tissues. On the other hand, most ordinary, and a few special, histological methods are given in note form—Prof Harris is a master of the art of compression—so that the succesive steps are clearly seen These explicit directions, so rare in the more dignified kind of treatise, are of inestimable value to the student and to others who only occasionally have occasion to make histological preparations The book consists of about 200 numbered paragraphs, most of which refer to particular preparations The main features of these are again indicated in note form, so that the student can draw what he sees through the microscope, and understand what he is looking at and the purpose of the slide There are only two plates, one showing the blood-cells in colour, and the other photographs of embryonic sections, the student therefore learns from his own preparation and not from illustrations, there are also one or two useful line drawings illustrating methods The print is on one side of the page only, and every alternate leaf is blank for drawing, so that there are three unnumbered pages for the student's use to every one of instructions. Unfortunately, the first of these is not entirely blank, being inscribed with six circles, presumably intended to represent the microscopic field This idea has its points for those persons who never know where to start with a drawing, but will induce a kind of claustrophobia in the artistically minded Apart from this, the volume is attractive and will doubtless prove as useful as its predecessors

THE LANCET

ONDON SATURDAY, DECEMBER 1, 1934

TREATMENT OF SEPTICÆMIA

THE fatality rate in septicæmia, and especially streptococcal septicæmia, is known to be very gh Statistics cannot take into account portant variables such as the type of organism, e site of its entry, and the condition of the patient the time of infection It appears, however, at the risk of death is of the order of 70 per cent more Faced with this risk, it is urgently cessary to give conscientious consideration to ery suggested means of treatment, and the alysis of results in 100 cases which has been ade by Prof F T CADHAM,[1] of the University Manitoba, will be studied with corresponding terest Treatment, naturally, is dependent on agnosis, and the treatment of septicæmia any method depends on its early recognition ood cultures provide the only certain means of agnosing septicæmia, but sometimes unfortely they fail to grow an organism which is rtainly in circulation The failure is probably e to errors in technique, and since SCHOTTLLER in 1910 first described the anaerobic reptococcus, it has become increasingly clear at anaerobic culture is necessary if the bacteriogist is to play his proper part Last year r LEONARD COLEBROOK and Dr RONALD HARE,[2] Queen Charlotte's Hospital, reported 62 ses of puerperal infection with these organisms, nd offered many useful suggestions for the isolaon of such strains At the same time the volume blood taken by them might well be increased hey recommended 4 c cm inoculated in volumes 2 c cm —that is to say, two separate cultures, nce, however, circulating organisms are often carce, 20 c cm inoculated in 5 c cm volumes is o be preferred These two workers were naturally ccupied with puerperal strains, and it may be ecalled that Dr ELIZABETH WHITE,[3] working t the same hospital, expressed her belief that he anaerobic strains were confined to the genital ract and caused autogenous infection Anaerobic treptococci are not, however, found in puerperal fections alone, indeed they have been recovered n cases of bacterial endocarditis in men It is ssential therefore to include anaerobic culture n all cases of suspected septicæmia—particularly s the aerobic strains often grow equally well, if et better, under anaerobic conditions

The method used by Prof CADHAM is twofold he patient receives the serum of an immunised rabbit and also serum from normal human beings The method of preparing the rabbit's serum is especially interesting Vaccines of dead streptococci and staphylococci from cases of septicæmia are injected into rabbits from the age of six months until they die Blood is first withdrawn from the animals when they are two years old, and before this is done the rabbit is injected with a vaccine of the infecting organism of the actual patient to be treated, 10 c cm of blood is taken from the heart with a needle, and the serum is injected into the patient The human serum is taken from a compatible donor, 100 c cm of blood is removed at a time, and from four to ten doses of the serum obtained from this quantity are given on alternate days It is not clear why serum is preferred to whole blood, but perhaps the slight lessening of the volume to be injected is held to be advantageous

In our issue of March 10th, 1934, appeared a paper by Dr P LAZARUS-BARLOW and Dr. L P BLAYNEY CHAMBERLAIN reporting 12 cases of septicæmia treated with fresh human serum Their rationale was identical with CADHAM'S, both being based on the known deficiency of complement in sufferers from this condition Their small series included only three deaths—a mortality of 25 per cent—and CADHAM'S series is even more striking, showing a mortality of 10 5 per cent in 95 cases Nowadays transfusion in some form or other is widely advocated and in early cases of septicæmia its use is or should be universal, whether we accept the technique of Prof CADHAM and administer the serum often, in small doses, or give whole blood less often In late cases, with abscesses, transfusion is required to combat the anæmia, but where there is dilatation of the right heart, in highly febrile cases in the second week, normal whole-blood transfusion is often dangerous In such cases CADHAM'S technique, wherein small volumes are transfused, is a useful compromise, indeed it is almost the only course left open The hyperimmunised rabbit's serum is an interesting innovation, but the two years' course of vaccines naturally implies a longish interval before its value can be assessed It is probably based on a theory of bactericidal action, since little if any antitoxic value could be expected The effect of meningococcal serum, however, does not depend, so far as is known, on any antitoxic property, and pneumococcal antisera are not wholly antitoxic, since the pneumococcal toxin is not potent The simultaneous use of two methods makes it difficult to apportion the credit for Prof CADHAM'S success, and in this country few physicians would yet venture to omit antitoxic serum in streptococcal septicæmia It is perhaps a pity that the antitoxic sera in use are usually made by injecting toxin alone into horses, whereas the "polyvalent sera" are prepared by injecting vaccines There is no reason why horses should not be immunised by both processes, but before this is done, more definite information is required about the theoretical basis of CADHAM'S rabbit serum treatment The successes claimed are so great that a strong case can be made for an the present formula for the œstrus-producing hormone are not given clearly Some reference should surely have been made to the large number of œstrus-producing substances occurring in the urine of the pregnant mare, and also to the recent synthetic work in this field The anterior lobe of the pituitary is dismissed in a mere two pages, one of which is devoted to a description of acromegaly and gigantism, and there is only a passing reference to the recent work on the thyrotropic, adrenotropic, and other stimulating hormones from this lobe The work of Collip and his co-workers on the conception of antihormones should at least have been mentioned

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[1] Amer Jour Med Sci, October, 1934 p 512; see also THE LANCET, 1934 i 565
[2] Jour Obst and Gyn Brit Emp 1933 xl, 609
[3] Ibid p 639

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Practical Histology

For Medical Students. Third edition By D. T HARRIS, M D, D Sc, F.Inst P, Professor of Physiology, London Hospital Medical College. London H. K. Lewis and Co, Ltd. 1934 Pp 36. 7*s* 6*d*

THIS is a very useful laboratory manual, and contains just that miscellaneous assortment of information which is of use in everyday histological routine It is not in any sense a text-book, explaining in detail neither histological technique, nor the microscopic appearance of tissues. On the other hand, most ordinary, and a few special, histological methods are given in note form—Prof Harris is a master of the art of compression—so that the successive steps are clearly seen. These explicit directions, so rare in the more dignified kind of treatise, are of inestimable value to the student and to others who only occasionally have occasion to make histological preparations. The book consists of about 200 numbered paragraphs, most of which refer to particular preparations The main features of these are again indicated in note form, so that the student can draw what he sees through the microscope, and understand what he is looking at and the purpose of the slide There are only two plates, one showing the blood-cells in colour, and the other photographs of embryonic sections, the student therefore learns from his own preparation and not from illustrations, there are also one or two useful line drawings illustrating methods The print is on one side of the page only, and every alternate leaf is blank for drawing, so that there are three unnumbered pages for the student's use to every one of instructions Unfortunately, the first of these is not entirely blank, being inscribed with six circles, presumably intended to represent the microscopic field This idea has its points for those persons who never know where to start with a drawing, but will induce a kind of claustrophobia in the artistically minded Apart from this, the volume is attractive and will doubtless prove as useful as its predecessors.

THE LANCET

LONDON SATURDAY, DECEMBER 1, 1934

TREATMENT OF SEPTICÆMIA

The fatality-rate in septicæmia, and especially in streptococcal septicæmia, is known to be very high Statistics cannot take into account important variables such as the type of organism, the site of its entry, and the condition of the patient at the time of infection It appears, however, that the risk of death is of the order of 70 per cent or more Faced with this risk, it is urgently necessary to give conscientious consideration to every suggested means of treatment, and the analysis of results in 100 cases which has been made by Prof F T Cadham,[1] of the University of Manitoba, will be studied with corresponding interest Treatment, naturally, is dependent on diagnosis, and the treatment of septicæmia by any method depends on its early recognition Blood cultures provide the only certain means of diagnosing septicæmia, but sometimes unfortunately they fail to grow an organism which is certainly in circulation The failure is probably due to errors in technique, and since Schottmüller in 1910 first described the anaerobic streptococcus, it has become increasingly clear that anaerobic culture is necessary if the bacteriologist is to play his proper part Last year Dr Leonard Colebrook and Dr Ronald Hare,[2] at Queen Charlotte's Hospital, reported 62 cases of puerperal infection with these organisms, and offered many useful suggestions for the isolation of such strains At the same time the volume of blood taken by them might well be increased They recommended 4 c cm inoculated in volumes of 2 c cm—that is to say, two separate cultures, since, however, circulating organisms are often scarce, 20 c cm inoculated in 5 c cm volumes is to be preferred These two workers were naturally occupied with puerperal strains, and it may be recalled that Dr Elizabeth White,[3] working at the same hospital, expressed her belief that the anaerobic strains were confined to the genital tract and caused autogenous infection Anaerobic streptococci are not, however, found in puerperal infections alone, indeed they have been recovered in cases of bacterial endocarditis in men It is essential therefore to include anaerobic culture in all cases of suspected septicæmia—particularly as the aerobic strains often grow equally well, if not better, under anaerobic conditions

The method used by Prof Cadham is twofold the patient receives the serum of an immunised rabbit and also serum from normal human beings The method of preparing the rabbit's serum is especially interesting Vaccines of dead streptococci and staphylococci from cases of septicæmia are injected into rabbits from the age of six months until they die Blood is first withdrawn from the animals when they are two years old, and before this is done the rabbit is injected with a vaccine of the infecting organism of the actual patient to be treated, 10 c cm of blood is taken from the heart with a needle, and the serum is injected into the patient The human serum is taken from a *compatible donor, 100 c cm of blood is removed at a time, and from four to ten doses of the serum obtained from this quantity are given on alternate days It is not clear why serum is preferred to whole blood, but perhaps the slight lessening of the volume to be injected is held to be advantageous*

In our issue of March 10th, 1934, appeared a paper by Dr P Lazarus Barlow and Dr L P Blayney Chamberlain reporting 12 cases of septicæmia treated with fresh human serum Their rationale was identical with Cadham's, both being based on the known deficiency of complement in sufferers from this condition Their small series included only three deaths—a mortality of 25 per cent—and Cadham's series is even more striking, showing a mortality of 10 5 per cent in 95 cases Nowadays transfusion *in some form or other is widely advocated and in early cases of septicæmia its use is or should be universal*, whether we accept the technique of Prof Cadham and administer the serum often, in small doses, or give whole blood less often In late cases, with abscesses, transfusion is required to combat the anæmia, but where there is dilatation of the right heart, in highly febrile cases in the second week, normal whole-blood transfusion is often dangerous In such cases Cadham's technique, wherein small volumes are transfused, is a useful compromise, indeed it is almost the only course left open The hyperimmunised rabbit's serum is an interesting innovation, but the two years' course of vaccines naturally implies a longish interval before its value can be assessed It is probably based on a theory of bactericidal action, since little if any antitoxic value could be expected The effect of meningococcal serum, however, does not depend, so far as is known, on any antitoxic property, and pneumococcal antisera are *not* wholly antitoxic, since the pneumococcal toxin is not potent The simultaneous use of two methods makes it difficult to apportion the credit for Prof Cadham's success, and in this country few physicians would yet venture to omit antitoxic serum in streptococcal septicæmia It is perhaps a pity that the antitoxic sera in use are usually made by injecting toxin alone into horses, whereas the "polyvalent sera" are prepared by injecting vaccines There is no reason why horses *should* not be immunised by both processes, but *before* this is done, more definite information is required about the theoretical basis of Cadham's rabbit-serum treatment The successes claimed are so great that a strong case can be made for an extensive trial of his methods—especially at a time when maternal mortality, largely from streptococcal septicæmia, shows no sign of abating.

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[1] Amer Jour Med Sci October 1934 p 542, see also The Lancet, 1934 i 867

[2] Jour Obst and Gyn Brit Emp 1933 xl 609

[3] Ibid p 637

THE FIVE-DAY WEEK

IMPROVEMENTS in the standard of living conduce directly to improved standards of health. Without doubt the mechanisation of industry has been a factor of immense importance in ameliorating social conditions, but a flow of cheap commodities produced under good working conditions must not be the only claim. Unless changes take place in the hours of work mechanisation has a boomerang effect, for it not only displaces labour but fails to stimulate the proper use of leisure. The social State of the future, and maybe the not very distant future, demands for its steady growth and solid basis some constructive planning in hours of work and in the use of leisure. Any experiment along these lines is of interest to the medical profession, for the repercussions of these things are numerous and widespread. We have before us the report[1] by Sir RICHARD REDMAYNE, who was nominated by the Ministry of Labour to investigate at the invitation of Messrs. BOOTS, of Nottingham, the working of the experimental five-day week at their works and offices. It is an interesting document on a significant experiment which has proved so successful that the company has decided to continue the new working week indefinitely. Economically the scheme is a success and from a health standpoint it has already borne good fruit. Not only are the workers fresher as a result of two complete days of rest in the week, but the young people who attend night classes are enabled to get the fresh air and exercise which otherwise they tend to lack. The change from school to work is often, as Sir GEORGE NEWMAN has pointed out, a landmark associated with a deterioration in physical standards, and if the avoidance of this deterioration were the only benefit of the shorter working week it is a very important one, for the medical officer of the company reports a beneficial effect on all workers, but especially on the young. He also anticipates even greater value from the changed hours in the winter than in the summer. The shorter working week has entailed a slight redistribution of hours, but on the whole even the total hours of work have been reduced, the offices for instance working 38 hours 20 minutes in the week. In spite of reduced hours output and service have been maintained and no reduction in wages has been made. This of course is the essence of the scheme, and the inevitable reduction in staff which would have normally followed rationalisation has been avoided.

It is not suggested that this scheme can be applied indiscriminately to all industries, but it is well worth study because when the urge to find them is strong enough ways and means can often be found. The critical position of unemployment in industry generally is a sufficient motive to forward schemes of this kind as fast as possible. It appears from the report that when this change was first suggested various sectional managers felt that it was impracticable, but the idea was pushed forward and in the result we find all the witnesses before the investigating committee stating that in actual practice what they thought to be impossible proved to be a workable proposition. This is a point worth bearing in mind. Every industry must study its own problems, but it is encouraging to know that such desirable social ends are capable of achievement without economic loss. Each such experiment is welcome and we are glad to find a pharmaceutical company which has many contacts with our own profession moving towards things that we all hold to be essential to national welfare. There are some five-day weeks in operation in other concerns—Mr SEEBOHM ROWNTREE'S letter in Monday's *Times* tells of a reduction of hours from 48 to 44 per week in the cocoa and chocolate industry, made 18 years ago, with a five-day week; the previous loss of working hours through minor illness has been reduced without raising costs of production. Social and industrial welfare is still too often regarded as "something to be conceded if possible." But the medical profession regards social welfare as the sole justification for all economic endeavour and welcomes any evidence that modern industry is becoming alive to the responsibilities which increase with every advance in productive technique. Spontaneous developments of self-government are more healthy and more vital than reforms imposed from without. We hope to see informed and constructive criticism of this public-spirited adventure.

MEDICAL DEGREES IN LONDON

THE number of candidates for admission to many, if not all, the London medical schools in October proved to be far in excess of the accommodation available, while it may be recalled that last year also many applicants were rejected by the more popular schools. The onus of selection is generally left to the dean; early applicants for the most part are able to secure places if their attainments and manner promise well. Not that the choice is here easy, for it needs a prophetic eye. It is notorious that a metamorphosis can take place somewhere in the closing phase of the medical student's growth at least as wonderful as that which occurs in the life-history of the tadpole, but in an opposite direction. Instead of losing, like the tadpole, svelte elegance and acquiring a jerky gait and address, and angular limbs, and the embryo doctor sheds the outward attributes of the student, acquires the grace of the professional man, and will assume tails, at least on suitable occasions. The finished product of the medical schools, after the polish of a few months in "the house," may be hardly recognisable as the same lad who sought admission six years previously. With experience, however, deans develop a flair for detecting the student who will bring credit to their school, whether through academic achievement, ctical good sense, enthusiasm for the traditions he place, or athletic prowess The establishment igid criteria for admission is as a rule avoided, se are liable to defeat their own object, besides ving highly inconvenient when the son of a lued alumnus presents himself with a strong sonal and sentimental claim for admission but king certain qualifications

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[1] A Review of the Experimental Working of the Five Days Week. Boots Pure Drug Co Ltd., Nottingham. Pp. 70. 1s.

If the medical schools were self-supporting, her through endowment or through students' s, the criteria of admission would be a matter of mestic policy, of no general concern But since e heavy subsidy essential to modern medical lucation is paid through the University Grants mmittee, the particular university to which a edical school is attached has a vital interest in intaining the proportion of students accepted ho are reading for a degree as against a diploma he announcement in THE LANCET last week that t St Mary's hospital, London, it is proposed from ext October to admit only students reading for a egree coincided with the publication of a letter rom Sir ERNEST GRAHAM LITTLE, which shows that t is not only the admission of students without cademic aspirations but also the defection of the matriculated aspirants before graduation of which complaint is made He points out that though the University of London distributes a very large um—this year £100,000—among its medical schools, the proportion among those students who are nominally reading for a London degree but who actually become bachelors of medicine and surgery is lamentably small The principal reason offered by the authorities of the schools for the leakage is that owing to economic stress many students have been obliged to enter practice without the delay caused by graduation, economy of effort, however, is probably as potent a factor in the decision as economy of money There is, of course, a pecuniary advantage in abbreviation of the non earning period, but not as far as fees are concerned, since the examination fee for the Conjoint Board diploma is higher than that for the Final M B, B S Lond The temptation to qualify early by diploma assails both the ambitious and the average student, since the responsible work open to them as doctors offers far more valuable experience than do lectures and classes If after qualification they decide on general practice they often feel that they will gain little by proceeding to a degree—8 letters after their name are as effective as 4—while those who aspire to specialisation and an honorary staff will anyhow have to belong to one of the Royal Colleges as a condition of election Whatever the cause, however, the fact remains that the university is subsidising a large proportion of students who never graduate, a grievance that will not be met merely by restriction of the entry to matriculated students unless some means is found to induce them to complete the degree course Sir ERNEST GRAHAM LITTLE would apparently be satisfied by the raising of the second M B to a degree examination conferring the title of Bachelor of Medical Science The objection to this compromise is that unless the curriculum in anatomy and physiology is extended, the high standard of the degrees of the University of London, of which it is justly proud, will be lowered In any case a B Sc in anatomy and physiology would be a happier solution than the ad hoc creation of a degree with an ambiguous title But it is surely in medicine, surgery, and obstetrics rather than in anatomy and physiology that a university standard of education is desirable for doctors, and the problem is how to persuade the students that a diploma which they can take earlier, with less effort, and which has earned deserved prestige is not all that the University of London expects from students whose schools they assist The popularity of the double diploma depends mainly on the fact that examination in the fundamental subjects can be taken separately at intervals of three months, but too many students, or their parents, yield to the lure of this convenience

Indirect pressure could, of course, be applied to students by the reservation of the coveted resident appointments to graduates, but here a dean would find himself faced with many difficulties in maintaining a rigid rule while there are obvious objections to such a course Accident would often find a student with undoubted clinical acumen whose reasons for not graduating have been outside his control, a student favoured by the honorary staff could not easily be refused a house appointment One solution would be to ask for grants from the Royal Colleges to assist in the maintenance of the medical schools from which they derive their life-blood, and for the University Grants Committee to allocate the funds at their disposal in proportion to the students who graduate rather than in proportion to those admitted That the University of London does not take a parochial view of the problem is shown by the fact that it regards with no disfavour the substantial number of students from Oxford and Cambridge who come to its schools for their clinical work, but return to their own universities to take degrees The legitimate demand seems to be that grants designed to aid in the maintenance of a university standard of education for doctors should bear fruit in the production of university graduates, while no large graduation by students is likely, for many practical reasons, to decrease the number of diplomates of the Royal Colleges, whether in London or elsewhere

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THE eighth annual congress of the British Institute of Radiology which incorporates the Rontgen Society, will be held at the Central Hall Westminster from Dec 5th to 7th and an exhibition of apparatus organised by the British X ray industry will be held at the same time and place Sir Humphry Rolleston will open the congress at 2 30 P M on Wednesday; the Silvanus Thompson lecture will be given by Dr H H Berg (Dortmund) at 5 P M on Thursday, and the Mackenzie Davidson lecture by Sir William Bragg O M at 3 P M on Friday On the same evening, at 7 45 at the Trocadero Restaurant Mr G Shearer, D Sc, the president will take the chair at the annual dinner Further particulars will be found in our Medical Diary

ANNOTATIONS

COLITIS GRAVIS

CHRONIC ulceration of the colon is probably commoner than is usually supposed Dr. Edmund I. Spriggs tells us[1] that out of 7220 consecutive admissions over a period of 18 years to the private hospital for internal diseases which he directs, 159 were reported to have frequent bloody stools In 66 cases the bleeding came from rectal and anal lesions, in 48 cases from chronic ulceration of the bowel, in the remainder the bleeding was due to neoplasm, cirrhosis, or other causes Late cases of ulceration of the large bowel, a not infrequent terminal complication of carcinoma, nephritis, or endocarditis, are not included in the series Thirteen of the 48 cases of chronic ulceration followed amœbic dysentery; the others would commonly be called ulcerative colitis, but Dr Spriggs prefers the term "colitis gravis" A statistical analysis shows little difference in the symptoms and signs of the two groups between the amœbic variety and the other Diarrhœa was present in 11 out of 13 of the first group, in 29 out of 35 of the second, the corresponding figures for abdominal pain were 8 out of 13 and 28 out of 35 As many as 10 to 20 or even more stools may occur in the day, when so frequent they are usually composed entirely of mucus and blood, and associated in the acuter stages with a distressing precipitancy which is often initiated by a meal Seventeen out of 48 had no physical signs in the abdomen The loss of strength and weight was pointed out by Hale-White, whose original description of the disease in the *Guy's Hospital Reports* of 1888 gave it a status as a clinical entity As there is so little difference clinically between the two groups, reliance has to be put on bacteriological examination for their separation In 11 cases the *Entamœba histolytica* was found, in 2 the cysts only, in several of these there had been no suspicion of amœbic infection before the discovery was made There is nothing to be wondered at in this because the symptoms are due not to the amœba or its products but to the ulceration of the colon to which they have given rise, thus Dr A F. Hurst has repeatedly stated that in his experience the colon in bacillary dysentery also manifests precisely the same appearance as in ulcerative colitis Recent follow-up investigations at Guy's Hospital and the Birmingham General Hospital have shown a mortality of 30–40 per cent in ulcerative colitis Dr Spriggs's experience is much happier Of his 35 cases of colitis gravis he only lost 7, and 3 of these were hopeless on admission And it is now ten years on the average since these patients were treated One out of 13 of the amœbic cases died. Dr Spriggs attributes this low mortality to a course of treatment which, although largely empirical, has the following outstanding principles The diet must be sufficient to maintain strength and weight and at the same time be non-irritating to the bowel Intestinal douches are used to remove decomposing discharges gently from the ulcerated areas Normal saline formed the basis of most of the irrigating fluids, various astringents being added. Symptoms such as griping, sleeplessness, and secondary anæmia were duly treated Antibacterial preparations have proved frankly disappointing at Ruthin Castle, but Dr Spriggs admits that he did not have the opportunity of using the vaccine and serum for which Dr. J. A Bargen of the Mayo Clinic has claimed so much American experience, as shown by a recent symposium,[2] has not been consistent in identifying the Bargen diplo-streptococcus or in confirming the results obtained from its products Dr Moses Paulson, from his long experience in Baltimore, is inclined to attribute the successful treatment at Rochester more to the application of the art of medicine than to any particular therapeutic procedure At Ruthin Castle the amœbic group was treated on the same lines as the other cases except that emetine was given in some form or other by various routes Remarkably clear X ray photographs by Mr. O A Marxer demonstrate the progress of cure and the value of radiography in the examination of parts of the colon out of reach of the sigmoidoscope.

FRIENDS AND ENEMIES

A PSYCHOLOGICAL study by Dr Raymond B Cattell, psychologist to the Leicester education committee, which appears in the September issue of *Character and Personality*, is directed to the discovery of the traits of character which make men friends or enemies. The subjects of study were a group of 62 students of a rather isolated residential college Assessments were based as the result of previous inquiry on the existence of a general character-factor "W" covering such traits as persistence, energy, tactfulness and their opposites, and of a general temperament-factor "C" displayed in qualities of cheerfulness, sociability, adaptability and their opposites Perseveration and "fluency of association"—a quality covering rapidity of associations and spontaneity of flow of ideas—were also assessed, the estimate of each student being carried out by a committee of his fellows While it may be objected that the method chosen is to some degree unscientific, it must be admitted that it was the only one at present open to the investigator, since intelligence is the only factor of mind which has been measured with any precision. Some of the results obtained were such as would be expected on general grounds Popularity on the whole appears to be attached to moderate "surgency," a term covering the positive aspects of the above-mentioned factor "C", also to very high will-character and very low perseveration Unpopularity is associated with very high surgency, low will-character and very high perseveration In the last-mentioned quality friends were found to be either nearly alike or else widely different Friends of high perseverators also had a lower rating in perseveration than friends of low perseverators Moderately low perseverators however are often leaders, representing as they do a compromise between the popularity of the low perseverators and the high will-character of the average perseverator High perseverators had fewer friends than low, and more enemies

Dr. Cattell's study is more interesting in itself than for any possible immediate practical application The traits studied do not cover all qualities that attract one person to another, and friends will continue to be made on the basis of interests and opinions or through mere chance contiguity, or by a kind of intuition which may, of course, be unconsciously based upon the qualities described by Dr Cattell Hostility too may find its source in purely chance episodes unrelated or only slightly related to qualities of character and personality Dr Cattell suggests the possibility of a similar study of compatibility between husbands and wives Doubtless there is much material for such study—especially of incompatibility, if the daily press is to be taken as an index—but evidence of value psychologically would be difficult to obtain and certainly not reliably from the parties concerned While various combinations of such qualities as are described may play their part in producing the sentiment which a large part of the world regards as the ideal basis for marriage, it is unlikely (to put it mildly) that prior to marriage the parties would tolerate such a psychological analysis Public opinion, as shown in the debate last week in the House of Lords, is not yet inclined to approve any sort of medical certificate before marriage, even in the interests of eugenics

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[1] Quart Jour Med, October, 1934, p 549

[2] Jour Amer Med Assoc, 1933, ii, 1687

DISTRIBUTION OF WEIL'S DISEASE

THE October issue of the *Bulletin* of the International Office of Public Health contains reports on the occurrence of Weil's disease in Germany, the United States, France, Japan, and Sweden, which were presented by representatives of these countries to the permanent committee of the Office at the April–May session According to Prof Reiter, the German delegate and president of the Health Office of the Reich, it is impossible to furnish exact statistics about the frequency of Weil's disease in Germany, as the disease is not notifiable in that country where only sporadic cases have been reported from time to time at Freiburg i B, Heidelberg, Frankfort a M, Hamburg, and Cologne A number of German observers such as Uhlenhuth and Zimmermann Knack, Kister, and Burgwall have reported that the disease is spread by the agency of rats in bathing places sewers and rivers Dr Hugh S Cumming, the United States delegate, remarks that most American observers believe that there are at least two diseases, both distinctly infectious, which frequently though not invariably give rise to jaundice which is often intense One of these diseases is caused by *Leptospira icterohæmorrhagiæ*, while the other disease or group of diseases is due not to this agent but to some other micro organism It has also been suggested that in the mild type of infectious jaundice the leptospira may be the causal agent, although it may not be found in the blood, secretions, or excreta The earliest description of infectious jaundice in the United States can be traced back to the war of 1812 From that date until 1886 a total of 11 epidemics of infectious jaundice have been reported in the United States exclusive of thousands of unclassified and doubtful cases which occurred during the war of 1861–65 Between 1886 and 1920, 51 more epidemics have been collected exclusive of the cases in the Hispano American and world wars In 1921 and 1922 infectious jaundice became extremely prevalent in North America, especially in New York State, where about 700 cases occurred Both in the United States and in Latin America, where epidemics of infectious jaundice have also occurred in recent years, the mortality of the disease is low, except perhaps in pregnant women The French report is presented by Mlle Erben, who is in charge of Dr Pettit's laboratory at the Institut Pasteur, Paris, and has drawn up graphs based on the examination of sera sent for the agglutination test and showing that during the period 1923–32 there was a fairly steady rise in the incidence of spirochætal jaundice in Paris and the departments without any actual epidemic This rise was probably explained by the increased interest in the disease shown by the clinicians who sent the specimens to the laboratory The number of fatal cases did not appear to be high and did not exceed 5 to 6 per cent All the cases of meningeal spirochætosis on record had recovered Dr M Tsurumi, the delegate of Japan, reports that Weil's disease, the causal organism of which was discovered by his fellow-countryman, Prof Inada, is almost ubiquitous in Japan, but in its epidemic form is closely connected with agriculture, so that numerous cases occur during the period of agricultural labour from July to November, whereas there are hardly any in the winter In most of the Japanese prefectures, in contrast with Europe and America, Weil's disease is notifiable and active preventive measures are taken in the form of destruction of rats and inoculation The incidence of the disease varies in different years and districts The total number of cases in Japan during 1933 was 1636 with a fatality rate of 4 6 per cent, whereas in the Ibaraki province during the last six years there were 1327 cases with a fatality-rate ranging from 16 9 to 29 9 per cent According to Dr G Olin, Weil's disease is almost unknown in Sweden, where only six cases, three of which were fatal, occurred in the course of a year and examination of 100 rats at Stockholm showed that only six were infected with the leptospira In view of the excellent hygienic conditions prevalent in Sweden, Dr Olin thinks that it is unlikely that Weil's disease will assume an epidemic form in his country

TASTE AND CHEMICAL CONSTITUTION

IT is surprising how little, and at the same time how much, is known about this subject An article by A J Mee in the October issue of *Science Progress* summarises the present position The four general classes of taste are sweet, bitter, salt, and sour, and certain chemical generalisations can be made—for instance, that acids taste sour The sourness is attributable to the hydrogen ion, but not to this alone, for the taste of hydrochloric acid is lost on dilution while its H ion concentration is still four times that at which acetic acid can be easily detected by the tongue Saltiness is evidently due to the anion Cl', but complications arise directly different chlorides are compared It is evident that in simple binary compounds both ions play a part, and the resulting taste, although broadly classifiable in one of the groups mentioned, follows some law of mixing which at present is not understood Much more semi empirical knowledge exists with regard to organic compounds, particularly as to their quality of sweetness Several radicles, some of them quite complicated and apparently irreducible, are known to confer sweetness under certain conditions The chief of these is that there should be also present an auxiliary non specific group, for example a simple hydrogen atom It is also known that other radicles for instance a carboxyl group, may turn sour a substance which otherwise fulfils the conditions for sweetness whether some fusion of sensation is responsible for this or whether the new grouping is specific, is not known From these examples, of which many more will be found in the paper quoted, the curious state of the subject may be seen; one or two branches are systematised incompletely, it is true yet the fundamental principles connecting chemical constitution and taste are almost unknown But the elucidation of these might be of considerable *importance* A problem which suggests itself is the reason why some animals can apparently by taste, detect poisonous substances, while the human race is unable to do this Another point of interest is the connexion between taste and smell, there can be little doubt that the latter has acquired in man an æsthetic *importance* which transcends its utility Not only may it *confuse* investigations upon taste but it suggests the pos bility that in sourness, sweetness, and so forth, we may be dealing with biologically false values, dictated by the criteria of pleasantness and unpleasantness instead of good and bad One could, with difficulty, visualise a world safe for pedestrians in which sight was unimportant for self-preservation, and in which the idea of the eye as a distance receptor was quite foreign to the mentality of those carrying out research on vision It is unfortunate that the lower animals are incapable of yielding information about their sensations; so many organs are known which have relinquished their original function and taken over a new one, that it seems highly probable that those special senses which we can do without have acquired, in the course of evolution, a fresh significance

THE USE OF CARBON DIOXIDE IN OBSTETRICS

THE value of carbon dioxide, given with oxygen to newly born infants who need resuscitation, is well established although the practice is comparatively recent Now we are presented with evidence[1] to show that the same gases are effective remedies for two of the most formidable complications of pregnancy, post-partum eclampsia and hæmorrhage The case reports are impressive and demonstrate the striking results of inhalation of a mixture of 10 per cent. CO_2 with 90 per cent. oxygen by patients unconscious and convulsive Post-partum hæmorrhage has been treated by a mixture of 5 per cent. CO_2 with 95 per cent. oxygen; this is stated to have promptly controlled the bleeding in 25 consecutive cases The author regards this mixture of great prophylactic value and gives it as a routine immediately after delivery, to maintain the tone of the uterine muscle Since doing so in the last two years he has met with no undue bleeding from the placental site He maintains that the proper use of CO_2 and oxygen "prevents and controls a condition after the accepted but inadequate measures have failed," and points out that Yandell Henderson suggested the use of carbon dioxide for stimulation of the uterine muscle so long ago as 1909 A mild degree of shock can so diminish the oxidation of lactic acid, present presumably to excess in the tissue of the fatigued uterus, that an acid base imbalance destroys the muscle cell tone Its effect in correcting this and the acapnia due to hyperpnœa at the end of delivery is the probable explanation of the advantageous results which follow post-partum inhalations of CO_2 and oxygen

ATOPY AS A CAUSE OF EPILEPSY

THE idea that epileptic fits may be allergic reactions is no new one Many attempts have been made to track down and remove offending proteins or to carry out specific or general desensitisation in epileptic patients, and the results have not been very encouraging Dr Jonathan Forman, however, who is lecturer on diseases due to allergy in the Ohio State University, thinks there is a small but definite group of cases in which atopy—by which he means inherited allergic tendencies—is a dominant factor in the epilepsy, and which can be cured by anti-allergic measures[2] The four criteria in the diagnosis of these cases are a family history of atopic manifestations, a similar personal history, eosinophilia before or during the attacks, and positive reactions to tests for protein sensitiveness in the skin For identification of the offending substance Forman favours Walzer's indirect method, in which the effect of the suspected substance is observed on an area of the skin of a normal person into whom some of the patient's serum has been injected. Specific treatment is best effected by removal of the offending substance from the diet or environment. Specific "desensitisation," a term to which Dr. Forman objects, is not likely to be successful in the case of foodstuffs, which are the commonest offenders Non specific treatment includes the alteration of the physiochemical balance by various drugs or by vitamin A, and the removal of unfavourable factors Among the latter Forman includes fatigue, climate, malnutrition, constipation, and focal endocrine and emotional disorders He gives an account of a few cases which have yielded happy results in his hands, but the method should obviously be reserved for those cases of idiopathic epilepsy in which the diagnostic criteria are present and treatment along the usual lines has failed.

AGRICULTURAL RESEARCH

IN its first report[1] the Agricultural Research Council deals with the period from July, 1931, to Sept. 30th, 1933. This is the third research department created by order of the Privy Council, and like the other two—the Medical Research Council and the Department of Scientific and Industrial Research—it is responsible directly to a committee of the Privy Council and with its two fellows is designed to cover the whole field of scientific research in this country supported by Government grants Of the members of the Council, which meets under the chairmanship of Lord Richard Cavendish, two-thirds are appointed for qualifications in the basic sciences underlying agriculture and one-third on account of general experience and interest in agriculture The subjects with which the Council is concerned being so numerous and varied, six standing committees were set up to survey and consider problems under different headings. To most of these committees were added from outside the Council one or two specialists on the subject concerned For many purposes the committee on soils and plant nutrition has collaborated with one on plant physiology, breeding, and disease, the committee on animal diseases with others on animal nutrition and breeding, dairying, and animal products, a sixth standing committee on economics remaining distinct Other more specialised committees were also formed, and since research on animal diseases was regarded as urgently needed, in view of the large increase in the animal population projected by the Government, that aspect of the Council's work has claimed a large share of attention Committees have been set up to promote research on tuberculosis in conjunction with the Medical Research Council, on *Brucella abortus* infections in man and animals, on Johne's disease in cattle and sheep, on braxy and allied diseases of sheep, on diseases of swine and on fowl paralysis The work of the foot-and-mouth disease research committee has also come under review. That the intimate connexion between human and animal disease both on the clinical and the pathological side has been constantly kept in mind is shown by the constitution of these committees

The agricultural problems concerning plants and animals, in relation to nutrition and to agents of infection, are opportunely brought together at a time when our knowledge of foods is rapidly advancing and diseases due to viruses are taking an increasingly important place in the study of infective processes

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[1] McCormack, R M Anæsth and Analges, September–October, 1934, p 213

[2] Arch Neur. and Psychiat, September, 1934, p 517

[1] Cmd 4718. H M Stationery Office Pp 204 3s

The report includes a survey of scientific laboratories and institutes and records as far as its limits permit the state of agricultural research in this country Unfortunately the Council came into being during the lean year 1931 and the sum of £11,000 put at its disposal for purposes of research requires careful husbanding The coördinating office of the Council is designed to prevent overlapping and to assist development in new and important directions The report contains evidence of the need for more workers and increased funds, and it has been one of the main objects of the Council to support the claims of education both in England and Scotland Agricultural like medical research is largely concerned with applied science, but this does not mean that support will be confined to work on immediately practical problems, the aim is rather to direct it into channels where fundamental problems can be studied in a field suggested by practical needs Of special interest for medical readers are the introductory reviews in the report which deal with animal nutrition and disease and other biological subjects but the economic outlook cannot fail to interest all who have a regard for national welfare The secretary to the Council is Sir William Dampier, F R S

BOARDING-OUT

SCOTLAND has been in advance of this country in its administration of mental hospitals Patients could enter them of their own free will many years before the Mental Treatment Act of 1930 and could leave them to be boarded outside with far greater ease The twentieth annual report[1] of the General Board of Control for Scotland states that last year 63 private patients and 1200 rate-aided patients were boarded out Naturally a large proportion of these are mental defectives Of the 442 boarders in Glasgow and Govan only 7 required removal on account of unsuitability The result of placing patients in home conditions and providing simple occupation is proving everywhere encouraging Latent capacities in many were discovered, but it is the self-respect which is aroused under these home conditions which is the most gratifying feature of the arrangements It seems clear that whilst the intelligence quotient of the patients may not alter, their whole aspect, physical and mental may improve Some of the defectives have been discharged, and the placing of mentally defective children who have come into the courts under guardianship has yielded encouraging results Patients and guardians are not the only gainers It is reported that the presence of the patients in the community is of definite value in awakening sympathy and understanding and combats the medieval ideas still prevalent respecting mental sickness Last week at the Public Health Congress Lieut Colonel W Brooks Keith told of 26 patients boarded-out from St Audry's Hospital, Melton This would not have been possible without the zeal of local voluntary associations The simple dement and the medium grade defective are found to be the most suitable types So far the attempt has only been made in less than 2 per cent of those usually resident at the hospital In Scotland the proportion is 7 per cent The stimulating example is the Belgium town Gheel with its population of 18,000, of whom 3000 are suffering from mental defect or disorder They are boarded upon the normal agricultural population with full medical supervision The patients come from many countries and whilst the arrangements are simple even crude the benefits of such a colony are patent Increasing utilisation of schemes for boarding out, without discouraging earlier ascertainment, should do something to relieve institutional congestion

DIRECT REPRESENTATION ON THE G M C

Sir Henry Brackenbury was returned last Friday as Direct Representative for England on the General Medical Council, which is in session this week He obtained 9317 votes to 2665 given to Dr E A Gregg and 2340 to Dr Mabel Ramsay His return to the Council, on which he has already sat for ten years, was a foregone conclusion, for he stands in a class apart as elder statesman who through good repute and evil repute has championed all that is best in medical practice, even when many practitioners did not see so clearly the right direction The astonishing thing is that, with Sir Henry to vote for, the other candidates should have polled so many votes, and the voting is evidence of the strong desire of the constituency to have a woman among its five representatives and of its appreciation of Dr Gregg's plucky stand as an independent candidate The five direct representatives on the Council are now Dr E K Le Fleming, Dr J W Bone, Mr Bishop Harman, Dr H G Dain, and Sir Henry Brackenbury, and as in the ordinary course of events four years must elapse before there is another election, this will give the medico political committee of the British Medical Association leisure to consider again the working of the election machinery This was Sir Henry's own suggestion at the last B M A Council meeting, but Dr Dain went further and desired the omission from the scheme of the requirement to call meetings of the whole profession in each area for the nomination of candidates Such a provision, he said, gave an opening for the charge of camouflage, it seemed to him anomalous to pretend that the meeting summoned was one of the whole profession and afterwards to make the persons chosen B M A candidates Dr Hawthorne's criticism of the scheme was even more downright and, as he pertinently remarked, the method has led to no stronger protest simply because the machine, such as it is, has hitherto resulted in the return of admirable representatives Now that some representatives, at any rate, resent the method of their election the time seems ripe for revision And the four years' interval gives time

THE GERMAN EUGENIC LAW IN PRACTICE

IT is now approaching a year since the German Eugenic Law of July 14th, 1933, came into force,[1] and Dr Gerhard Simon tells us the effect of the law during the first nine months of the present year in the district of Neuhaldensleben of which he is medical officer His district, which is one of 67,000 inhabitants mainly employed in agriculture, adjoins Magdeburg on the great plain of the River Elbe in Prussian Saxony In this district 127 proposals for sterilisation have been received and submitted to careful scrutiny, with the result that no action was taken in 30 cases as the subjects of the proposal were either past the reproductive age or unfit to leave an institution In only 2 cases was the proposal found to lack due cause a fact to which Dr Simon calls attention as it had been feared that the law might be misused for personal spleen In 54 cases sterilisation has been carried out after inquiry on the instruction of a eugenic court In 5 other cases it has been postponed on medical grounds Of the proposals 55 were for men and 72 for women Their ages varied from 12 to 46 years the numbers in the four decades being 10-20 years 36 21-30 years 33, 31-40 years 35

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[1] H M Stationery Office 1s 3d

[1] See THE LANCET 1933 ii 55

41–46 years 3. The eldest was a man of 46, the youngest a girl of 12, in whose case sterilisation was postponed on medical grounds The 127 proposals originated as follows:—

By official doctors	72
,, institutional doctors	20
,, legal representatives	3
,, the hereditarily ailing persons themselves	32

That 25 per cent. of all the proposals came from the subjects themselves, Dr. Simon claims as evidence of the wide interest taken by all sections of the population in the need for the new law and the advantage to be gained from it He writes that few serious difficulties have arisen and very few appeals against the decision of the court, the result, he thinks, of the success of propaganda in awaking a proper public understanding Dr Simon concludes with the remark that German eugenists are following with keen interest the efforts made in other European countries to enact similar legislation The resolution of the Zurich eugenic congress of July, 1934, was widely welcomed in Germany

PHYSIOLOGY OF ARTIFICIAL PYREXIA

AN editorial article in the *Journal of the American Medical Association* of Nov 3rd comments favourably on the treatment of syphilis by artificially raising the body temperature It is apparent that a knowledge of the general changes induced in the body during this type of treatment is urgently needed, and in the same issue Dr. William Bierman and Dr Ella H Fishberg record a number of facts concerning modifications in the blood, acid-base balance, circulation, and respiration of patients who have been kept for some hours at 104° to 107° F At present they offer very little discussion of their findings, but we look forward to the more critical analysis which is promised We have previously pointed out [1] that, broadly speaking, the outstanding features of hyperpyrexia which is physically produced are the overbearing of the temperature-regulating mechanism, and the direct increase of the metabolic rate of the tissues This is borne out by many of the statements of Bierman and Fishberg, but how many of the abnormalities they note are due to an exaggeration of normal regulatory mechanisms, and how many to a direct uncontrollable action of the heat, is hard to judge The loss of sweat may be enormous, attaining such values as 4 litres, and one is tempted to think of it as futile it must put a great strain on the mechanisms which regulate water metabolism and osmotic pressure, even though the actual fluid is replaced by drinking, and yet it fails to perform the function for which it is called forth—namely, reduction of the temperature On the other hand the sweat contains great quantities of lactic acid, which, if retained in the body, would have serious effects on the alkali reserve, as it is this is reduced by half, and the question arises, Is there after all a "physiology" of hyperpyrexia? Perspiration certainly seems to subserve an excretory function under these conditions, since, in comparison with sodium chloride, the lactic acid is concentrated twenty times in the sweat Prof. Y Kuno [2] has also adduced evidence of a specific excretory action of the skin during exercise, and suggests that, when lactic acid is eliminated by this channel, possible damage to the kidneys is averted; he states that the incidence of albuminuria in athletes is roughly in inverse proportion to the lactic acid content of their sweat.

The origin of this lactic acid is, on the evidence presented, difficult to account for The circulation-rate may be increased up to 400 per cent. and the oxygen capacity of the blood nearly 20 per cent.; hence the oxygen available for the tissues is enormously increased Their oxygen usage is, of course, also increased, but asphyxia is ruled out by the fact that the difference between the oxygen-content of the arterial and venous blood is small; the tissues seem to be rejecting oxygen and yet producing lactic acid. Both the free and combined carbon dioxide of the blood are lowered, so that although the alkali reserve is small, the blood is actually more alkaline in reaction than usual, and the respiratory centre is correspondingly depressed. It is impossible to attempt a plausible explanation of so many seemingly contradictory disturbances until their mutual relationships have been more closely scrutinised The condition presents certain points of resemblance to Yandell Henderson's "acarbia," [3] which he describes as typical of subacute asphyxial states, and for which he finds a theoretical explanation difficult

HORMONE TREATMENT OF UNDESCENDED TESTIS

AT a meeting of the section of therapeutics and pharmacology of the Royal Society of Medicine, on Nov 13th, Dr A W Spence and Dr E F Scowen reported their observations at St Bartholomew's Hospital on the treatment of cryptorchidism with prolan It may be recalled that P E Smith and E T Engle showed that injections of an extract of the anterior lobe of the pituitary caused descent of the testes—and the appearance of other secondary sex characteristics—in immature animals These effects were due to activation of the interstitial cells of the testis, which were led to produce their hormone in quantities similar to those of mature animals, and Engle later demonstrated that the same result could be obtained by injection of the gonadatropic substance from the urine of pregnancy. Spence and Scowen injected 500 rat-units of prolan intramuscularly, twice weekly, into eleven boys of ages ranging between 4½ and 15 years In the successful cases the descent of the testes took place in periods varying from 2 to 11 weeks In two out of five patients with bilateral cryptorchidism, both testes descended normally, and in two others one testis descended, in the fifth there was no change Of six cases in which the condition was unilateral there were suitable reactions in three These observations confirm the work of S B D. Aberle and R H Jenkins,[4] who got very similar results in man and the rhesus monkey They are a remarkable and unexpected outcome of laboratory work on the sex hormones, and it is not irrelevant to refer at the same time to a somewhat surprising action of œstrin which has only lately been recognised In 1933 Harold Burrows, E C Dodds, and N M Kennaway [5] showed that if œstrin be painted on the skin of mice the animals develop peculiar hernias in the scrotal region, and this finding has been pursued in greater detail by Burrows [6] The hernias described may be due to a relaxation of the pelvic muscle, and the discovery of this effect makes it seem unnecessary to postulate the existence of a separate hormone "relaxin," which has been held responsible for some of the physiological changes of pregnancy

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[1] THE LANCET, 1934, i, 1129

[2] The Physiology of Human Perspiration, London, 1934.

[3] Jour Amer Med Assoc, Sept 8th, 1934, p 750 and Sept 15th, p 834

[4] Jour Amer Med Assoc, Aug 4th, 1934, p 314

[5] Nature, 1933, cxxxi, 801

[6] Brit Jour Surg, January, 1934, p 507, see THE LANCET, 1934, i, 411

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXIX.—THE PROGNOSIS IN MALARIA INFECTION

IT is difficult to state in precise figures the liability to complications or permanent disability following malaria The outlook has, however, greatly improved since the war There the ravages of malaria were to be seen at their worst, but under satisfactory conditions of life the prognosis in malaria infections is on the whole a good one The change in outlook is due to improved methods of diagnosis and of treatment, especially the latter

In all forms of malaria, as in other protozoal infections, the earlier and the more energetic the treatment, the greater the hope of effecting a permanent cure In other respects the prognosis in each of the four clinically separable conditions—which arise from infection with the four distinct species of malaria parasites found in the blood of man—differs widely and must be considered by itself

Benign Tertian Malaria

This form of malaria is the most familiar one In the typical clinical state a paroxysm of fever is produced by this parasite once in every 48 hours, but it is now recognised that there are many variations to what has been described in text books as the classical tertian temperature chart There is, for instance, a quotidian and sometimes remittent initial temperature which resembles that of typhoid fever, and unless this is recognised by the physician many mistakes are liable to be made both in diagnosis and in prognosis Apart from its disagreeable habit of manifesting relapses at odd, and often unexpected intervals, benign tertian malaria cannot in any sense be regarded as a menace to life The relapses usually occur at monthly intervals but infection may remain latent, and an interval of nine months to a year may elapse between one relapse of the same infection and another Thus it comes about that a patient may develop a typical malarial attack in some northern country, such as England, a year, or even as long as two years, from the time he leaves an endemic zone Benign tertian malaria may produce debility and psychological disturbances, but though it may lead to a grave secondary anæmia, so pronounced as to give rise to the suspicion of some more serious underlying cause, it seldom kills In times of stress and danger patients heavily infected with the parasite may possibly die of heart failure during great and long sustained exertion Even under the most searching conditions, however, the gravest danger of benign tertian malaria is its liability to produce relapses, and it is now becoming gradually recognised that quinine, given in any form, and in whatever heroic dosage, is quite incapable of finally exterminating this infection, at any rate in tropical countries This has given rise to serious doubts about the much vaunted specificity of this drug Here again it must be stressed that in malaria, probably more so than any other type of infection, the quality of the soil is as important as the character of the seed, no drug, however administered appears to have such curative action on people who are harassed and underfed as on people who are well nourished and housed in a good climate Prognosis in benign tertian malaria is different for patients continuing to reside in the tropics and for those who live in this country

Further, not only do the clinical states produced by the various species of malaria differ, but also the life span of the particular parasite It is generally agreed that the life span of one infection of the benign tertian parasite is three years, or at most three and a quarter years A patient infected with malaria in the tropics should thus not expect to suffer from relapses for more than three years after returning to England There is no doubt, too, that an immunity *to each particular species of malaria parasite is produced*, S P James has pointed out that the recurrences of relapses at odd intervals, with the shedding of the toxins into the blood stream, stimulates the machinery of immunity and thus a person who *has recovered from a* severe attack of benign tertian malaria becomes immune and can no longer become infected This fact, long known to tropical residents, has now been proved experimentally

Fortunately no complications of benign tertian malaria are at all comparable with those produced by some of the other species The advent of the new chemotherapeutic drugs should greatly improve the prognosis in this type of infection In India, especially in the Army during recent years, it has been shown that the relapse rate from benign tertian malaria amongst the troops can be reduced from a figure of over 20 per cent to about 8 per cent with three weeks' quinine treatment followed by a short course of a combination of quinine and plasmoquine Atebrin, the newest advent amongst malaria specifics appears to have a slow but sure action upon the benign tertian parasite It is usually well tolerated by these patients, and if given in three or more prolonged courses of a week on end the results appear to be satisfactory Atebrin in large doses given over periods of more than 10 days appears to be a cerebral excitant and in susceptible people may produce a temporary psychosis (See THE LANCET, Nov 3rd 1934, p 979)

Subtertian or Malignant Malaria

The parasite that causes this disease although not zoologically far removed from that causing benign tertian malaria, should be regarded as belonging to a totally different order The clinical states that it may produce are almost bewildering in their variety. They may be merely transient, causing low fever, occasional headaches, a sense of malaise *or just a* feeling of inability to perform the daily task, in fact, the parasite has acquired the property of lying low in the blood ready to spring forth whenever a suitable opportunity presents itself Patients coming from the West Coast of Africa where this infection is almost universal, mostly arrive in England feeling in the best of health It is only when they have lived here for a month or two that this fever makes itself apparent, often in the most alarming forms

Subtertian malaria may precipitate a sudden catastrophe and may even be the cause of sudden death The parasites, which accumulate in the capillaries of various internal organs may attack the brain, where they produce cerebral symptoms, the liver where they produce jaundice and other hepatic complications, the pancreas producing acute pancreatitis, and the intestines producing choleraic symptoms and even those of intestinal obstruction They may produce symptoms of dysentery and intestinal hæmorrhage, or purpuric effusions *into the* skin

COMPLICATIONS

Cranial complications —Of the complications, those which attack the brain are the most serious These may take the form of mania, delirium, epileptiform convulsions, hemiplegia and altered psychology, and so on It is now coming to be recognised that severe alterations in the mentality of a patient who has suffered from subtertian malaria, and even clinical conditions which may resemble encephalitis lethargica, may be an aftermath of cerebral infection with the parasite These states are produced by small subcortical hæmorrhages which, if not immediately fatal, leave behind them disseminated malarial granulomata which represent the organisation of minute hæmorrhages

There are, too, the rarely seen ocular affections; "malarial amblyopia," due primarily to an anæmia of the retina as a result of malarial infection of the retinal vessels, which may produce partial destruction of sight

These major and tragic aspects of subtertian malarial infections are more liable to be seen in the non-immune person—i e, the tenderfoot on his first visit to a malarious country, they are not usually seen in natives who have produced a strong immunity against this disease, or in Europeans who have passed through the "salting" stage. Cerebral malaria does not often arise *ab initio* in England; such cases as have reached these shores have usually developed cerebral complications on board ship In these *accés pernicieux*, as the French call them, the outlook is extremely grave unless the most vigorous antimalarial measures are instantly taken

Blackwater Fever —The minor clinical forms of subtertian malaria bring other dangers; symptoms may be referable to the digestive tract, for instance, nausea, vomiting, signs of indigestion without a rise of temperature Often subtertian attacks are apyrexial, the so-called algid forms Very often too, in these cryptic infections, there is no anæmia or any enlargement of the spleen to guide the unwary. These are the dangerous cases, for the man with the fewest symptoms, and often the fewest parasites in his blood, is the one most likely to develop that most dangerous complication, blackwater fever

It is probable that the longer a person is infected with subtertian malaria the more prone he is to develop blackwater fever, which seldom develops following a first infection The liability to develop blackwater fever appears to depend upon the life-span of the parasite For instance, blackwater fever may appear any time from the day of arrival in this country to nine months after arrival, when the liability disappears Blackwater fever is the worst feature in the prognosis of subtertian malaria, for the mortality of this disease is usually about 25 per cent

THE EFFECT OF TREATMENT

It is this great variability in the symptomatology of subtertian malaria and the diversity in the complications which can follow in its path that confuse the public mind about malaria as a whole The prognosis of subtertian malaria, once diagnosed, depends largely on treatment It used to be argued that the larger the doses of quinine given, the more certain the massive destruction of parasites and the better the outlook Few now accept this point of view. The subtertian parasite is, on the whole, much more amenable to quinine than is the benign tertian, but the parasites are much more numerous, multiple infections of individual corpuscles are more common, and chemical processes occur within the infected corpuscles which cause them to conglomerate and so cause blood stasis In the treatment of this form of malaria, therefore, many more factors are involved than the mere killing of the parasites It has, moreover, been pretty well shown that massive doses of quinine (grs 30 or more a day), especially if given intramuscularly or intravenously, are liable to excite blackwater fever. There has been more uncertainty about the treatment of subtertian than about the treatment of any other form of malaria There is reason to believe that with the advent of atebrin the outlook has become much altered It is now possible to exterminate this parasite in the blood with adequate doses of atebrin, with quinine perhaps as an adjunct, in a way never formerly anticipated; it is possible to prevent entirely the recurrence of relapses Immunity is much more easily produced in the human body to subtertian malaria than to the benign form, so that even under natural conditions relapses are rarer The extreme degree of anæmia and cachexia, the hard-baked spleen, the wrinkled and pigmented skin, the emaciated facies formerly common in retired residents from the tropics, are no longer to be seen. An average attack of subtertian malaria treated early and adequately should not interfere with the subsequent good health of its victim, and the liability to blackwater fever is becoming less and less It is possible that in cases adequately treated with atebrin blackwater fever will not develop

Quartan Malaria

Quartan malaria is undoubtedly the rarest form of infection in the European who visits the tropics It has a peculiarly limited geographical distribution, but it is liable to turn up when least expected. It produces odd and indistinctive attacks of fever, often at widely separated intervals, and can apparently exist in the human body for a much longer period than the two forms dealt with above The life-span of this parasite is anything from five to six years As a rule its presence does not interfere with general health, but one complication—parenchymatous nephritis—follows it more commonly than any other type The association of quartan malaria with nephritis has been suspected since the first observations of Malcolm Watson and Clarke in Malaya, and researches in British Guiana by Giglioli have confirmed it Long-continued infection with this parasite undoubtedly predisposes to parenchymatous nephritis, which is common among tropical natives Occasionally quartan nephritis is seen in Europeans; its course can be greatly modified by adequate treatment of the underlying malaria Acute nephritis associated with quartan infection is the most satisfactory form to treat The action of atebrin upon this parasite is not yet established, but it has been shown to yield to prolonged treatment with quinine and plasmoquine in the same manner as does the benign tertian

Ovale Tertian Malaria

The parasite *Plasmodium ovale* has only recently been established as more than a museum curiosity in man. It is possibly a parasite of the monkey which is now becoming adapted to the human host, it has been found only in those parts of Africa, the Congo and adjacent regions, where the great apes live Its life in the human blood is a very limited one, and it is apparently capable of producing only the mildest forms of fever, the prognosis of infection with this parasite is extremely good, the organism is so kind as to die out of human blood of its own accord, without the necessity of prolonged drug therapy.

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PANEL AND CONTRACT PRACTICE

Some Figures from London

The number of insured persons in the County of London entitled to medical benefit in the third quarter of the present year was 1,891,635 the number of practitioners on the medical list 2068—there are besides 123 institutional doctors on the list. Of these 45 have no insured patients at all, 645 have less than 250 insured persons apiece, whilst only 3 (who must of course be in partnership or have an assistant) have over 4000 on their lists. The average list for London, excluding assistants and limited lists, is 927. The number of prescriptions issued in that quarter was 1,811,343, as compared with 2,518,478 in the first quarter of the year, the number of prescriptions per insured person dropped from 1.41 to 1.10, and the cost per person from 10.93 to 7.86 pence. These are averages for the whole of London, but some interesting figures were recently got out to show the work done by practitioners with panels of comparable size in different areas of the metropolis. The number of prescriptions issued per insured person in these practices (all containing over 3000 insured persons) in July, 1933, was

Paddington	0.37
St Pancras	0.32
Shoreditch	0.65
Stepney	0.40
Westminster	0.16

the average for the whole of London being 0.32. The probable explanation of the large difference in Westminster is that the bulk of the insured persons in that area are *of the domestic servant class*, who attend the surgery for minor ailments but are usually sent home if seriously ill. The panel doctor sees little of them whether ill or well.

Arch Supports

Arch supports are no longer "ordinary splints," and therefore cannot be ordered by insurance prescription. No prescription for such supports has been issued since August, but in the first quarter of the year there were 16 at a cost of £1 2*s* 9*d*, in the second 33 at a cost of £15 16*s* 6*d* and in the third 76 at a cost of £53 0*s* 4*d*. It seems that in each successive quarter the number of prescriptions doubled whilst the cost was nearly four times as much. It would be interesting to know the explanation for the higher cost per prescription.

Fees for Emergency Treatment

A practitioner is required to visit and treat any insured person on his list whose condition so requires. He is therefore obliged to attend without extra payment to any accident or sudden emergency that may occur to any one on his list. In the event of this practitioner not being available what is the insured person in urgent need of treatment to do? Obviously he must call in another practitioner who, if not an insurance practitioner, will charge him a fee. The patient will then have the right to claim through the insurance committee for the return of that fee, the amount to be deducted from his doctor's remuneration. If the second doctor is an insurance practitioner he should not in the first instance charge a fee, for he is entitled to be paid for his services by the insurance committee under the emergency treatment scheme, if, that is to say, the case is decided to be an emergency. If not he can then charge the insured person a fee subject to certain reservation. Who then has to decide what is an emergency? The answer is that the panel committee has the duty of deciding whether the condition found by the second doctor was in fact an emergency, after receiving reports from both the doctors concerned. If the case is held to be an emergency, the panel committee has then to decide whether the fee should come out of the first doctor's remuneration or out of the general fund from which all insurance practitioners are paid. If the first doctor being away left no one available to do his work in his absence, the emergency fee will almost certainly be deducted from his remuneration. But emergencies do not always occur within two miles of the surgery of the doctor responsible and, if it takes place in some area quite out of reach of this doctor, payment for the second doctor's services will be ordered from the fund. Again, patients are not always living at home when they require emergency treatment, and if they stay more than 24 hours in another locality they become temporary residents there, when they are placed temporarily on the list of a practitioner in that area. If residing less than 24 hours outside their home area, the emergency scheme applies even to an insured person who has neglected to choose an insurance practitioner at home and is therefore on no doctor's list. The regulation which deals with this matter is at first sight rather ambiguous in its wording. The clause reads:—

> *Temporary Residents*.—A person who is accepted by or assigned to a practitioner as a temporary resident after the first day of a quarter will be deemed to be included in his list on the first day of the next quarter. Provided that if any application for treatment in cases of accident or other sudden emergency is made by an insured person (*a*) who is outside the radius of practice of the practitioner responsible for his treatment or (*b*) who is not on the list of any practitioner and who is outside the area of *his* residence and if in either case the insured person intends to remain and in fact remains outside such radius or area for less than 24 hours the practitioner providing treatment will, instead of having the applicant placed on his list, be entitled to be paid as though the treatment had been given in an emergency under the immediately preceding clause, and the amount paid to the practitioner will be payable out of the fund in the same manner and subject to the same conditions as payments made in respect of the administration of anaesthetics.

The ambiguity relates to the word which we have italicised. At first sight it appears that "his" relates to the practitioner's residence but when carefully read it obviously applies to that of the insured person. This wrongful interpretation caused a panel committee recently to disallow a claim for a fee by a doctor who had treated an emergency within the area of his (the doctor's) practice for an insured person who was not on anybody's list. The doctor's claim therefore clearly comes within the subsection quoted above.

The position of the panel committee is not easy in these cases. It has to be fair to (1) the doctor responsible for treatment, (2) the doctor giving the treatment and (3) the insured person. Taking them in order—if the doctor responsible is at home and is not sent for it is hardly fair that he should have to pay the cost of treatment he could easily have given. The second doctor, on the other hand has often little hope of being paid for getting up in the middle of the night to see some case which from the messenger's description is thought to be urgent, if he is not allowed an emergency fee by the committee. The insured person, being the party who actually feels ill, is always convinced that whatever was found to be the matter when the second doctor arrived it was definitely a serious emergency when the doctor was sent for Distance is another difficulty in these cases A doctor living close at hand will often be consulted for some supposed emergency rather than the responsible doctor living some distance (under two miles) away—simply owing to the disinclination to travel the extra distance A person getting grit in his eye will generally go to the nearest doctor for relief, rather than to his own doctor a mile away. It can hardly be argued that such a case is an emergency—the eye would hardly be appreciably worse for the extra ten minutes before the foreign body was removed—yet the patient will certainly maintain that it was too painful for him to wait, and the second doctor could hardly refrain from moving the grit when the patient is actually in his consulting-room This is enough to illustrate the difference between lay and medical opinion on what constitutes an emergency

SPECIAL ARTICLES

MENTAL WELFARE

ONE session of the conference held last week at B M A. House, under the auspices of the Central Association for Mental Welfare, was given up to a consideration of modern tendencies and developments in

Work for Mental Defectives

In spite of the excellent recommendations of the Wood report the administration of the Mental Deficiency Acts has, so far, proved half-hearted and ineffective This may well be due to the multiplicity of administrative control, for the labour is divided between the education and health committees of local authorities and the public assistance committees, while cooperation with the governors and superintendents of the institutions concerned is essential Miss Evelyn Fox emphasised these difficulties in her historical survey of the work of the Association ; none of its work, she said, would have been possible without the support and enlightenment of the Board of Control She pointed to the negligible increase in the accommodation of special schools since they were started The number of pupils in 1913–14 was 13,110 and in 1933 was only 16,862 The number of feeble-minded children is about 105,000 and according to Dr E O. Lewis's estimate 300,000 backward children are to be found in the elementary schools Miss Fox considers that the patently inadequate provision made for these children is due to direct discouragement on the part of the Board of Education who ignore the recommendations of the Royal Commission in the interests of economy Several other speakers at the conference agreed with her in thinking that medical certificates should not be necessary for attendance at special schools or classes and that this should be an educational rather than a medical matter Under the present system there can be no outside supervision of defectives between the ages of 14 and 16 unless they have attended special schools It is obviously unfortunate that this arrangement, made with the best of intentions, should have been so much misapplied Furthermore, it was pointed out in the discussion, that some monotonous industrial occupations were very suitable for defectives ; many special school pupils were successful at them in after life Miss Nugent (sec , Kent A M W.) said that it was in the interests of the community to encourage the establishment of occupational centres if only from an economic point of view , their cost is far less than the later cost of the same child under guardianship or institutional care

The Association has made great advances during its 21 years of existence and now has 51 local voluntary associations covering a population of 37 millions. Not least among the duties of a mental welfare worker are the adjustment of difficulties in home environment and the removal of prejudice against institutions Dr Noel Burke described the increasing tendency to replace the barrack-like buildings formerly used for institutional care by comfortable homes and colonies Defectives are now trained to live useful and happy lives either permanently in the colony or outside it in at least 10 per cent of cases Employment is facilitated by removing the child from an atmosphere of depression and placing him in one of achievement The Association undertakes the training not only of social workers but also of teachers of dull and backward classes, both highly specialised arts

The importance of early ascertainment was stressed by most of the speakers, and Dr L. S. Penrose pointed out its special value to research. Dr R H. Crowley urged that notification should not depend, as at present, upon whether the child has attended a special school, but upon the child's own merits Reliable ascertainment is essential for effective supervision

Another session of the conference dealt with the voluntary provisions under

Section V. of the Mental Treatment Act

This was also the topic at the quarterly meeting on Nov. 20th of the Royal Medico-Psychological Association when Sir Hubert Bond, who, in introducing the discussion, said he considered that this part of the Act would come to be looked upon as a charter of liberty' A fair title for the section would be "No certification but promptness of treatment " His plea was that every effort should be made to get mental patients to avail themselves of it Though the general response had been somewhat disappointing, he could not apply the word failure Patients were divisible into three grades the willing, the indifferent, the unwilling In most cases it was not difficult to place patients in their due category, but, where difficulty was felt, advantage could be taken of the 28 days' suspension provided in the Act There would always be patients unable to express either willingness or unwillingness , these the Board assessed at 15 per cent , and the Board suggested 55 per cent as the proportion of voluntary admissions likely to be attainable at county and borough mental hospitals, leaving 30 per cent to come in under certificate Of the admissions to registered hospitals and licensed houses some 6 5 per cent were received as temporary patients, the corresponding proportion for public mental hospitals being 1 8 per cent . Unfortunately, in only about two-thirds of the public hospitals was use made of this section Eliminating non-users, it was found that 2 per cent of the admissions to county mental hospitals during 1933 were temporary patients, 5 3 per cent to borough hospitals This comparison illustrated the beneficent results which arose from close contact between hospital staff, practitioners, and lay officials, supported by the mental hospital committee and magistrates.

Dr **Norman Moulson** (Cefn Coed Mental Hospital, Swansea) said that the staff at his hospital set out with the intention of making the best possible use of the Act, especially the provisions in Section V, the working of which in his area was proving increasingly successful

Dr **W Robinson** (City of London Mental Hospital, Stone) said that from 1925, when the City of London Various Powers Act came into force, to the end of 1930, 383 private patients had avoided certification and entered the hospital as direct admissions though they were not strictly voluntary patients Since the Mental Treatment Act, 1930, had been in operation, 255 private patients had been admitted on either a voluntary or a temporary basis, in the same period 48 under certificate Thus for them reception without certification must be regarded as a success But in three years only 1 out of 50 rate aided patients had been received without certification At least two out of three of them might have been sent in on a voluntary or a temporary basis Of the voluntary private patients 102 had had to be subsequently certified, and regrading had to be carried out in 145 cases out of a total of 1076 He shared Sir Hubert Bond's hopefulness

Mr **L G Brock** (chairman, Board of Control) said one of the main difficulties was to educate public assistance committees and relieving officers Members of the Association might also point out to practitioners who sent patients that Section V might have been used instead of certification, for it was impossible to escape the fact that certification was held in the present state of society, to carry with it a stigma This was shown by the persistent and skilful efforts to avoid it made by lawyers and all concerned in the case of better off patients The latest figures showed an improved use of Section V He was looking forward hopefully to the time when the treatment of mental cases would be decided, not on judicial authority, but on purely medical indications

Dr **William Dawson** referred to the similar Act for Northern Ireland passed in October 1932 Dr N C. Patrick had given him the figures for the first completed year's working Admissions to public mental hospitals in that year numbered 1227, 63 (or 51 per cent) being temporary patients, a higher proportion than in this country Ten of them had to be certified later At the two private mental hospitals 23 of the 42 (55 per cent) total admissions were voluntary patients From the public hospitals 23 were discharged recovered, 14 relieved or improved

Dr **M Andy Collins** spoke of the working of Section V in country districts The body of general practitioners had not yet, he thought a proper grasp of the provisions of the Act, fortunately errors in filling up the form could generally be put right on the patient's arrival It was not appreciated that a patient admitted under an urgency order could be treated as a temporary patient during the week covered by the order

Dr **Reginald Worth**, while agreeing that this Act was a great advance on the old one especially in regard to voluntary patients in public mental hospitals and their admission under an emergency order said that the temporary order did not appeal to him The stigma attaching to the certified patient was not lessened much if the patient had only been temporary In his own hospital (Springfield, Tooting) though easily accessible there had been only six temporary patients since the passing of the Act, and two or three of those had to be certified later It was often difficult to know whether the patient had [illegible] volition to know his own mind

Dr **J N Sergeant** thought it was impossible to ignore the existence of the stigma which was supposed to attach to people who had been in a mental hospital, though all reasonable people admitted there was no real cause for it When education had made better strides there would be less need for such measures of expediency If due regard was paid to expert medical opinion, the population of mental hospitals might consist almost solely of voluntary and temporary patients

Dr **Daniel Rambaut** said the temporary patient system had been proved very useful for patients suffering from alcoholic insanity, but he had found 28 days too short a time for detention following the return of volition In any future amendment of the Act he hoped that would be borne in mind

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PUBLIC HEALTH CONGRESS

During this congress, of which we reported last week some earlier sessions, the Incorporated Association of Hospital Officers set themselves, under the chairmanship of Sir **Arthur Robinson**, secretary to the Ministry of Health, to answer the question

Should the Chief Administrator of a Hospital be a Layman?

Major **Jackson**, who opened the discussion, said the question was one of great practical importance The administrator of the municipal or county hospital was a medical man, but his duties did not include raising money, purchasing supplies, settling questions of policy, and attending to the details of erection of new buildings Moreover, he had fewer specialist departments to deal with than in a voluntary hospital Was it advisable to train a man in medicine and surgery when the greater part of his time would be spent in administrative details? An administrator might be found among medical or lay persons, but the gift was an inborn one, and was on the whole more likely to be found amongst laymen because they could devote their time exclusively to the work In large municipal hospitals the medical man in charge had a layman under him The evidence was in favour of the layman as chief administrator on the ground that his whole life could be lived in the sphere and pathway of administration A good doctor could not as successfully be anything else Administration called increasingly for its own special training

Major **H Dryland**, speaking as a lay officer of the mental hospitals service, said that the mental institution had special problems of its own the population did not fluctuate much and very few of the patients were bedridden One of the chief difficulties was to find suitable occupation and recreation As many as 90 per cent were occupied in many hospitals now The chief direction should undoubtedly be medical The mental hospital had more and larger departments than the voluntary hospital nowadays, with consulting specialists, its committee carried out under statutory authority all the functions of the great hospital and several more If the medical man could administer that he could administer the voluntary hospital The lay officers suggested that he should have always at his right hand one man to attend to the business side of things Present practice varied considerably He agreed that when a doctor became a good administrator the medical flame burned less brightly While the chief authority should be medical he should be fully relieved of all administration that a competent layman could undertake

Mr. E. **METIVIER** (Edmonton) related experience of the very competent surgical officer of a large hospital who worked most harmoniously with his chief steward and devoted himself to his profession While the head should be a medical man, he should have a right-hand layman with proper status. The clerk or steward must not be a sort of supernumerary officer but the right kind of man. The lay administrator must not be belittled In the old poor-law days the Master, who was supreme, had refused to recognise the superintendent nurse and the present trend might be reaction There should be three chief people in administration . the doctor, the lay administrator, and the matron.

Mr A. H. **LEANEY** agreed that the problem was one of very great importance for the future The voluntary hospital would owe its continued existence to very much better administration—in all departments, including the medical In the old days three people counted the Governor, the Doctor, and the patient, with a very small p Nowadays there was a large team The administrator to-day was a coordinator of many departments The important matter was the way in which the job was done and great strain was thrown on character More and more the patient would become a case to the doctor and less an individual; the administrator must be one who always remembered the patient as a person He must be given equal status with the physician and the surgeon Medical men had managed to discipline themselves in the past, but they were under terrible temptations to-day and there should be someone in control of medical as well as lay hospital workers.

Mr E. H **HEALEY**, representing the old Masters' and Matrons' Association, said the term "pauper" was entirely forgotten in the service The duty of raising money could surely be removed without difficulty from the tasks expected of a superintendent; so also could the supervision of building In the purchase of stores and supplies the municipal hospital compared favourably with the voluntary hospital; standardisation and centralisation had gone far, though the responsible officer still had to exercise judgment There must be one supreme head and he must be medical, but the lay administrator should have a clearly defined scope and assured status The only hospitals run like this were the service and the council ones It was erroneous to think that the duties of the medical officer in these institutions were increasingly administrative as he rose in the service. Responsible heads of the medical, nursing, and administrative departments should be given clearly defined duties, access to the committee, right of report, and a chance to carve out a career.

Mr. J. S **STEVENTON** (Salop) agreed with the reader of the paper. He had for years encountered examples of profound lack of business knowledge in first-class medical men. Somebody outside the profession should be in charge

Dr. T W. **GOODE** (Oxford) criticised the word "chief" in the title For dealing with a medical question there must be a medical man It was his aim to leave his clerk and steward to deal with stores, but at the same time to express his opinion on any matter that had a medical bearing. It was easier for a medical man than a layman to mention matters of administration to medical men The two must work together as two hands and neither must be "chief" The problem was not who was cock of the walk but how to get people well

Mr H L. **EASON**, M S (Guy's Hospital), described himself as like a mule addressing an audience of horses and asses as to which was the better parent. Seeing that the duties of any chief administrator included incoming money and appeals, keeping accounts, general administration and discipline of the institution, and advice and policy, no one man could do them all There should be more than one administrative head A long medical knowledge and continued active practice prevented an executive officer from becoming narrow-minded and gave him a livelier interest in the people with whom he dealt The characteristic of the medical profession was intense individualism, and this was the breath of life to medicine A medical administrator could act as a more successful go-between in matters of policy, extravagance, punctuality, and so on. The word "chief" was a bad one Some lay administrative officers forgot the best traditions of medicine in making appeals or getting on good terms with the press, breaking that strict confidence which should exist between patient and hospital. Matters far more important than buying tea and butter were apt to be lost sight of if the superintendent were not medical No administrator could run a hospital, he must have a team, and the gifts he needed most were human understanding and tact It would be difficult to get any collection of lay administrators more efficient than the team of ex-medical superintendents at County Hall who helped to run the service There was and could be no answer to Major Raphael's question

Mr R H P **ORDE** (hon. sec, British Hospitals Association) had found no difficulty in approaching and dealing with matters on the borderline of administration and treatment if he went the right way about it He wondered at the vitality of this dispute Thirty years ago anybody had been regarded as capable of running a hospital, but now administration was (and should be) taught, so that the officer did not learn at the expense of the hospital The terms "layman" and "doctor" had no relevance at all A hospital was a hotel for the sick and required just as much management There was a danger when a man possessed qualifications not in constant use they caused a bias, and if there was one man on God's earth who needed to be free from bias it was the hospital administrator.

Dr **CAROLINE MAUDE** said there must be two people if the hospital was large There was a great need to separate the clinical superintendent from the administrator, the last word being said by the former The first consideration was the patient There was a lack of coordination of the different medical services in voluntary hospitals; a clinical superintendent would correct this

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BUDAPEST

(FROM OUR OWN CORRESPONDENT)

A COMPENSATION CLAIM

AN injection of camphor was ordered by the senior physician for a woman who had been operated upon in the obstetrical section of a municipal hospital (St Rochus) The physician was occupied with an urgent operation and he gave his instructions to a junior (In Hungary licences to practise are granted only to candidates who have served a year's apprenticeship after passing their examinations) The injection was administered by the junior on the inside of the thigh The patient experienced great pain and the senior physician had to be called. According to several witnesses, patients lying in the same ward, he turned to the junior and said "You young fool, what have you done?" After a few days the woman was transferred to the surgical section, where her leg had to be amputated because of thrombosis The public prosecutor brought an action against the junior for negligence causing severe bodily injury Two medico legal experts gave evidence that in their opinion the thrombosis had been caused by the injection which had been wrongly administered Against this, the supreme judicial medical council asserted that from the medical point of view no exception could be taken to the method of administration, which is one practised at several hospitals On this evidence the junior was acquitted of any criminal liability The patient did not acquiesce in this verdict and sued the city of Budapest, the senior physician, and the junior for damages amounting to about £500 and a monthly allowance of £15 It was urged on her behalf that the hospital was a municipal one and as such was responsible for any errors committed by its staff The case was brought before the high court of justice, which rejected the opinion of the medical council and accepted the evidence of the medico legal experts It accordingly found for the patient and ordered the city of Budapest and the two doctors to pay the damages and the annuity

CENTRAL BUREAU FOR THE SALE OF NARCOTICS

This new body, which has its offices in the vicinity of the central police station of Budapest, is administered by the local government authority and the minister for the interior At its head is a captain in the police force and he has under him a staff of seven including one medical expert and four detectives, all men with a special knowledge of smuggling The first case with which the new bureau had to deal was that of a cocaine smuggler who stole blank prescription forms from several medical practitioners On these he wrote out prescriptions for narcotics and forged the doctor's signature With some circumspection he handed in the prescription to a chemist at the other end of the town from where the doctor lived but the chemist's suspicions were aroused He telephoned to the police and they came and arrested the man, who proved to be a notorious cocaine smuggler

DIPHTHERIA IMMUNISATION

The routine method of diphtheria prophylaxis in Hungary at present is immunisation with the Ramon anatoxin According to the experience of Hungarian specialists this method gives a 90 per cent immunity against the disease This protection lasts for at least four to five years, and further observations may eventually prove that the immunisation is of still longer duration In the district of Balatonfured, where diphtheria is endemic, immunisation was made compulsory in the autumn of 1931 Since then 2022 children between the ages of two and four have been inoculated annually Since the first inoculation only one out of these 2022 children has contracted diphtheria, and even then the illness was very mild

MEDICAL FINANCE

All medical practitioners in Hungary are now obliged by law to keep in a ledger an accurate chronological account of all the money they receive and of all professional expenses they incur Each receipt and each item of expenditure has to be entered separately, and it is hoped that this will make it easier to assess the income tax of medical practitioners It is not necessary to disclose the names of patients or the nature of their diseases

The journal of Hungarian dental surgeons (the *Magyar Fogorvosok Lapja*) which is now in the [illegible] year of publication, has found it necessary to [illegible] a medico economic supplement Members of the dental profession are faced with many economic problems as a result of the constant battle they have to wage with the dental technicians, whose illegal competition is a menace to them

IRELAND

(FROM OUR OWN CORRESPONDENT)

CLEAN MILK

THE Irish Clean Milk Society held its annual meeting in Dublin, on Nov 23rd, under the chairmanship of its president, Sir Edward Coey Bigger In the seventh annual report, presented to the meeting, attention is drawn to the neglect by many hospitals to ensure that their milk supply comes from a tuberculin-tested herd Letters were sent to 32 hospitals and nursing homes in Dublin and County Dublin making inquiries on this point 16 answers were received, of which 12 gave assurance of that precaution Letters were likewise sent to 43 hospitals in the rest of the country only 12 replies were received, two hospitals only being supplied from tuberculin-tested herds A circular letter was sent to 115 schools pointing out the importance of a high grade milk, especially where children were concerned Thirty two schools replied, of which only 4 were getting milk from tuberculin tested herds and from dairies equipped with a cooler and steriliser During recent years a supply of free milk has been put at the service of needy and ill nourished children under a scheme organised by the Government with the help of the local health authorities, but of 88 local authorities only 17 supplied any milk from tuberculin tested herds The Society has drawn the attention of the Government to the difficulties put in the way of the production of clean milk by the high tariff on the importation of seamless tin ware, a commodity not manufactured in Ireland Some concession was made by the Government in the case of creamery cans but none in the case of pails and strainers The society has issued a useful memorandum on the Clean Milk Bill which has now passed its second reading in the Dáil

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV 17TH, 1934

Notifications —The following cases of infectious disease were notified during the week. Small[illegible] scarlet fever, 3001, diphtheria, 1701, enteric [illegible] 23, acute pneumonia (primary or influenzal) [illegible] puerperal fever, 41, puerperal pyrexia, 115, [illegible] spinal fever, 11, acute poliomyelitis, 14 [illegible] encephalitis, 8, encephalitis lethargica, 7 [illegible] 22, ophthalmia neonatorum, 103 [illegible] cholera, plague, or typhus fever was [illegible] the week

The number of cases in the Infectious H[illegible] County Council on Nov 26th–27th was [illegible] 0, scarlet fever 1919 diphtheria [illegible] whooping-cough 173 puerperal fever [illegible] babies) encephalitis lethargica, [illegible] other diseases 250 At St Margaret's [illegible] 14 babies (plus 8 mothers) with ophthalmia [illegible]

Deaths —In 121 great towns [illegible] there was no death from small[illegible] 3 (0) from measles 6 (1) from [illegible] whooping cough, 51 (11) from [illegible] diarrhœa and enteritis u[illegible] from influenza. The [illegible] those for London its[illegible]

Leeds Manchester and [illegible] of diphtheria. West Ham [illegible] was credited with 3 deaths [illegible] in any other large town [illegible]

The number of [illegible] was 235 (correspond[illegible] total births), incl[illegible]

CORRESPONDENCE

A CHRISTMAS APPEAL

To the Editor of THE LANCET

SIR,—In October, by your courteous permission, I was able to make an appeal to your readers for contributions towards our Christmas gift fund I do not wish to labour the distress which unfortunately exists, for it is well known to all The response to my appeal to date is £126 4*s*, a sum far short of what we need I am confident that it will be the desire of the profession that we should distribute gifts to each of the 650 beneficiaries on our books May I ask once more for a generous response and as soon as possible, so that when we sit down to our comfortable dinners we may know that some comfort and pleasure has been given to our own poor people Donations should be sent to the hon treasurer, Royal Medical Benevolent Fund, 11, Chandos-street, London, W 1

I am, Sir, yours faithfully,

THOS BARLOW,

Nov 26th President, Royal Medical Benevolent Fund.

FITNESS FOR PUBLIC SERVICE

To the Editor of THE LANCET

SIR,—I was much interested in the letter in your last issue from two sanatorium medical officers, and in support of their plea would like to record my own experience

Four years ago I was treated for pulmonary tuberculosis by artificial pneumothorax plus division of adhesions by cautery and diathermy, the disease was arrested and two years ago the pneumothorax fillings were discontinued. Since then—and indeed for most of the first two years—I have been at work, and I have no physical signs other than those of fibrosis Yet I find it quite impossible to obtain work with a public authority I was elected to a post under the local authorities of a large city, but was immediately dismissed after I had told the medical examiner my history—though he could find only the signs of fibrosis When I suggested that I should not join the superannuation scheme I was told that this was impossible, since it was of "statutory significance" It is certainly of great personal significance to any medical man who is an arrested case of tuberculosis that, with a very few exceptions, the only career open to him is that which is least suitable to him—namely, general practice

But if we look at this question, as we should, from the point of view of the State, is the present state of affairs the most beneficial possible? Quite apart from the fact that many patients gain experience of tuberculosis during the period of their treatment and are especially qualified to work as tuberculosis officers, &c, as was permitted until a short time ago, we must consider the question, Is the State going to benefit if this class of doctor is forced to take up work more likely to cause a breakdown—because the work suited to him from the point of view of regular hours and minimum amount of night work is now closed to him?

If it is true, as your correspondents say, that "this fund is a *retiring* and not a sickness benefit fund," it would surely be advantageous to the public authority if the persons receiving pensions were to die as soon as possible after ceasing work. The "first-class life" would be a disadvantage from the public point of view. But is not sickness benefit usually included in these schemes? If it is, an alternative to the increase of contributions from ex-tuberculous patients would be a stipulation that they should receive no salary during absence from duty caused by tuberculosis. This plan, however, might be difficult in operation and lead to disputes My own feeling is that the best solution to the present problem would be, in the words of your previous correspondents, the use of "clinical judgment, instead of rule-of-thumb rejection" I am, Sir, yours faithfully,

Nov 26th "EX-A P"

UNQUALIFIED RADIOLOGY

To the Editor of THE LANCET

SIR,—The time has surely come when steps should be taken to prevent the use of X ray apparatus by those whose capabilities are inadequate The present legal position is that anyone may purchase and use equipment which is, as is well known, a potential source of danger both to patient and to operator Thus it is possible for any individual to employ X rays for diagnostic and therapeutic purposes without having the necessary anatomical, pathological, and medical knowledge Can it be right that a radiographer (however skilled he may be as a technical worker), a chemist, or an engineer should be legally empowered to express an opinion as to the evidence of a pathological process or to expose a patient to a beam of X rays for purpose of treatment? It is of course recognised that members of the Society of Radiographers undertake that they will not interpret radiograms and that they will not carry out radiation therapy except under the strict supervision of a qualified medical practitioner, but there are may quasi-radiographers who are not members of this society and who therefore are not bound by such an undertaking

Radiographic interpretation and the determination of X ray dosage call for very skilled judgment, but it is suggested that such is not among the attributes of many who succumb to incautiously phrased advertisements which infer that efficient radiological practice requires nothing more than the acquisition and operation of a piece of apparatus

The remedy appears to lie in the hands of the general members of the medical profession The assistance afforded to them by radiology may be immense, but only when they will recognise that the whole subject is one requiring endless study, subsequent to a thorough training in general medicine, with especial reference to pathology and physics

We are, Sir, yours faithfully,

G SHEARER,
President of the British Institute of Radiology

J DUNCAN WHITE,
Chairman of the medical committee of the Institute

Welbeck-street, W, Nov 26th

MIDWIFERY IN GENERAL PRACTICE

To the Editor of THE LANCET

SIR,—As a rural practitioner who has practised midwifery single-handed for over forty years let me say how deeply interested I was in reading Dr Dale Logan's contribution in your issue of Nov. 17th (p 1141) It deserves to be printed in letters of gold. I feel sure every word he says will be welcomed and believed to be true by every general practitioner who has engaged in midwifery these past thirty years or so

Dr Logan is quite right when he says that press publicity, plus our local authorities and obstetric experts, have done their best to frighten general practitioners from doing any midwifery at all All the blame for puerperal morbidity and mortality was laid on their shoulders by these people Such expressions as "dirty doctors" and "dirty nurses" were freely used, and I remember reading in a medical journal that it would be a lucky thing for the lying in woman if the baby's head was always on the perineum when the doctor arrived! This was some years ago when the stir first began Since then big strides have been made—antenatal clinics a large increase in lying in beds in hospitals, and springing up of fine maternity homes up and down the country, yet in spite of it all, the maternal morbidity and mortality has increased rather than decreased So, I ask, what about it?

Is it not now said the safest place for a woman to be confined in is her own home? Rightly or wrongly, it is my opinion that through all time certain women will die during or after confinement, do what we may If every lying in woman was put into a maternity home and attended by expert doctors and nurses, I still believe there would be deaths Try how we may, we are not going to get a 100 per cent recovery from childbirth Almost the only death from puerperal fever I have seen occurred in a young healthy country girl who had a perfectly normal confinement in a very clean cottage amidst open fields and who never had a vaginal examination

I am, Sir, yours faithfully

ROBT A WELSH, M B

Felton Northumberland Nov 22nd

ROBERT MORANT

To the Editor of THE LANCET

SIR,—Your leading article on Mr Bernard Allen's excellent and most welcome Life of Sir Robert Morant must appeal strongly to those who came in touch with him during the eight strenuous years in which he was getting the health insurance scheme under weigh At that time it was not so widely appreciated as it is now that he had the real interests of the medical profession at heart and wished to see it take a more influential position in the community Many doctors who from a distance had viewed him as an over riding bureaucrat came to know him as a sympathetic counsellor and friend

To Morant public service in pursuit of noble aims was a joyous and romantic adventure, and as with the mountaineer increasing difficulties roused an increasing exhilaration of spirit He left nothing to chance Such details as the seating arrangements at a conference, the doors through which entrances and exits were to be made, the exact words to be used in delivering a message—all these were thought out and insisted upon He foresaw everything and provided for everything His methods of work were all his own He never sat down to write but stood at a high desk, or reclined on a long couch—both specially adapted to his great height—or strode about his room dictating rapidly with characteristic avoidance of official jargon "Don't use such expressions" he would say, "they are too official" With his staff he used what he described as an "oral shorthand" in which, for example, the word 'sputum' denoted 'arrangements made by a local health authority for the gratuitous examination of pathological specimens submitted for the purpose by medical practitioners", and a discussion carried on in such terms made considerable demands upon the attention of his hearers. He liked to have a subject explained to him in two sentences. To work at the office long after the usual time of departure was to him an unfailing source of satisfaction and he had difficulty in understanding why this feeling was not more widely shared When the maroon announced the beginning of the Armistice he was returning with a colleague to the office of the Insurance Commission from a conference at another Government department He stopped and said "That means the end of the war", and, as the excited crowds rapidly gathered in the street, he added "Well, we can't celebrate it in any better way than by going back to the office and getting on with our work" Creature comforts did not appeal to him His usual luncheon, when he found time to think of it, was a glass of milk and a bun, he never took afternoon tea and rarely smoked His joy in work was infectious. "Working with Morant is much more fun than playing with anyone else," said one of his colleagues to me, and this was the experience of many

Morant took a personal interest in his staff, which was revealed by acts of kindness that inspired many a recipient with a lifelong devotion Around him has grown up a crop of legend and reminiscence, and when those who worked with him find themselves together their talk sooner or later is of him as a supremely great and much loved chief

I am, Sir, yours faithfully,

G F McCLEARY,

Late Principal Medical Officer National Health Insurance Commission (England)

Gerrards Cross Nov 24th

THE DETECTION OF THYROTOXICOSIS

To the Editor of THE LANCET

SIR,—Dr Robertson and Dr Wilson have attempted in your last issue (p 1158) to extend the use of the impedance angle test for the diagnosis of thyrotoxicosis to a method for assessing the clinical progress of the disease It is necessary to be quite clear that the I A is not a measurement of any physiological process which is identical with basal metabolism and does not vary directly with the B M R It is for this reason that alterations of B M R due to exercise or the influence of sympathetico mimetic and parasympathetico mimetic drugs find no echo in the I A tests. I have found that very marked disturbances of metabolism in febrile states produced by Sulfosin injection leave the I A unaffected Nor is any change in I.A due to thyroid medication concomitant with alterations in B M R Any change which takes place in the I A is a slow change, and though in my experience I have found an invariable decrease in I A after partial thyroidectomy, the shortest [illegible] in which a very marked change has been [illegible] has been 10 weeks

Like Robertson and Wilson I have failed to [illegible] consistent changes of I A in myxoedema [illegible] is not clear why this condition presents [illegible] In 5 cases of untreated myxoedema I [illegible] normal limits and 2 negative. In [illegible] thyrotoxicosis I found positive [illegible] (83 per cent) 15 fell within norm[illegible] negative In the 8 cases wh[illegible] Robertson and Wilson found [illegible] has also been confirmed by [illegible] Smith (THE LANCET July 21[illegible] of 32 cases These observers [illegible] of the I A from the [illegible] marked in cases they [illegible] defined as mild My own [illegible] and some of the mild [illegible] of all cases (17 per [illegible] results

It is obvious [illegible] trials should [illegible] (e.g. 700 or [illegible] some modific[illegible] be necessary. On a group of 35 normal women I found a standard deviation of 0·010 The group is admittedly small, but the figure is confirmed by Holiday and Campbell Smith (loc cit) who on a different group of normal women found the standard deviation to be 0·012

The clinical value of the I A. appears to be that in 86 per cent of cases of thyrotoxicosis it gives a positive result that can be obtained in a few minutes with none of the inconveniences to patient and observer involved in a B M R. estimation For this reason the test is extremely useful for out-patient work I am, Sir, yours faithfully,

M. A B BRAZIER

London County Council, Mental Hospitals Department,
Central Pathological Laboratory, the Maudsley
Hospital, London, S E, Nov. 23rd

*** We take the opportunity of correcting a misprint in Mr. Cecil Joll's letter on this subject last week. On line 12 the words "a portion" should read *a fortiori* —ED L

PROTEIN SHOCK THERAPY IN TYPHOID

To the Editor of THE LANCET

SIR,—The observations of Dr Sinclair Miller and Dr. Manson-Bahr [1] on protein shock in the treatment of undulant fever prompt me to offer my experience of the same remedy in typhoid fever. There are very few cases of this disease in Toledo, and I have treated only five; but a brief report may lead others to try the method on a larger scale

The only paper on the subject I have discovered is one by Urioste and co-workers [2] in Montevideo, who refer to 195 cases. They produced shock apparently by the intravenous injection of Dessy antityphoid vaccine, and often they found it necessary to repeat the shocks several times, for they state they "produced a total of 282 intense shocks in 82 patients" in one hospital, "and 200 intense shocks in 91 patients" in another Unfortunately they do not give the final results, but in the whole series of shocks "only two accidents resulted." In the course of the paper they say:—

> "The symptoms of shock following the intravenous injection of the vaccine appear after from 30 to 180 minutes, characterised at first by chills which may last for about one hour and which sometimes are recurrent They are followed by a rise in temperature to 104°, 106° F., or even higher Subsequently the patients regain vigour and perspire profusely. Next follows arterial hypertension and humoral modification Subsequently the temperature drops suddenly The immediate result in some cases is complete apyrexia and the beginning of recuperation"
>
> "Shock was always accompanied by a marked polyuria Phenolsulphonphthalein was eliminated in only scarce quantities before the shock, but elimination after the shock was from 35 to 70 per cent The leucopenia in general was not changed by the shock The blood cultures showed the changes caused by shock inasmuch as they became rapidly negative. In cases in which the culture remained positive in spite of the clinical improvement and apyrexia it served as an indication that the shock had not been sufficiently intense Agglutination showed remarkable change. Before the shock agglutination was weak, while after the shock it was strong This indicated a marked bacteriolysis Ardin-Delteil, Negré, and Raynaud who studied the effects of vaccine therapy showed that antibodies and bacteriolytic properties appeared much earlier and were more active than in cases in which no vaccine had been used"

In their description of symptoms of shock the Montevideo physicians do not mention depression Their comparative studies are interesting and very commendable.

In the winter of 1927 and 1928 I had the privilege of seeing the sixty-seventh and sixty-eighth cases of typhoid treated by protein shock under the direction of Dr Karl Stejskal in Vienna. On the third day the fever had disappeared, the patients were feeling fine, asking for something to eat, and to all intent and purpose were well. Dr. Stejskal reasoned that if the person with typhoid, with a leucopenia, could have his blood picture changed to a marked leucocytosis, he should improve To accomplish this, he injected 5–10 c cm of sterilised milk intramuscularly. The usual result was a rise in temperature to 103° to 105° F, sometimes a chill and marked elevation in leucocyte count, ranging to 12,000 to 20,000 If the patient did not show this reaction, he gave intravenously 0·5 to 1·0 c cm. of lysed typhoid vaccine known by the trade name of Typhin. This gave a more rapid and equally definite response. The rise in temperature was followed by a drop in temperature to normal or sometimes below, so that 20–24 hours after the injections there was often considerable depression. To obviate this depression, 24 hours after the protein injection he gave intravenously 50 c cm. of a 50 per cent dextrose solution, in which was taken up strychnine nitrate gr. 1/40, dissolved in a small amount of water. This usually finished the treatment, the patient becoming more comfortable, regaining the normal alertness and appetite, with no further rise of temperature. The whole procedure usually required three days. After this the leucocyte count slowly returned to normal.

If a fairly good-sized vein can be found, a 20 gauge needle used, and the solution of dextrose given slowly, there will be practically no danger from thrombosis. In my cases I have used sterile milk, typhoid vaccine, and typhin. In my hands sterile milk has been least satisfactory.

Dr. Stejskal found that this treatment worked well if he secured the patient within two weeks of the onset of the disease If a longer time had elapsed the patient did not respond so well, and sometimes the temperature did not remain normal but began to rise on the second or third day after treatment. In those which had gone only two or three days over the two weeks, the temperature sometimes could be brought to normal by a second dose of dextrose, or protein and dextrose as before. He found that after the second week the best procedure was to use the typhin subcutaneously, daily or every other day.

In one of the papers on undulant fever [1] Dr. Manson-Bahr mentioned the rather severe depression following the protein shock treatment Stejskal's way of preventing this, I think, is worth reporting independently of the typhoid therapy, as applicable in any case where protein shock is used.

The following cases are typical of the usual response to this treatment

CASE 1 —Female, aged 18 Illness began on Jan. 26th. On the 31st, besides typical physical findings of typhoid, the blood count showed red cells, 4,650,000, white cells, 4750, and hæmoglobin, 86 per cent Agglutinations: typhoid 1 100, positive, para. A 1 100, negative, para B 1 100, slight agglutination; *B melitensis* 1 100, negative On Feb 4th at 2.30 P M typhoid vaccine 75,000,000 was given intravenously, and by 10 P M. the temperature was 105°, with pulse-rate 104 and respirations 28 Next day at 10 A M she had glucose (*50 c cm of a 50 per cent. solution*), plus strychnine nitrate gr 1/40, intravenously That night temperature subsided to 99°. Feb 7th. *temperature a little higher* Feb 8th: 1.40 P M, *mixed typhoid-para-typhoid* vaccine 50,000,000 intravenously; 4 P M, temp 101·2°; 8 P M, temp.

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[1] THE LANCET, 1933, i, 1177, 1178, and 1187.

[2] Urioste, J. P, Piaggio Blanco, R A and R O.: Arch Uruguayas de méd cir. y espec, 1932, i, 297.

104°, pulse 102, resp 22, 9 30 P M, temp 104 2° After this there was a gradual fall in temperature On the 9th at 9.50 A.M glucose 50 per cent solution (50 c cm plus strychnine nitrate gr 1/40) was injected intravenously Temperature gradually subsided Thirty-six hours later temp 96·4°, pulse 80, resp 20 There was no further elevation of temperature, appetite returned promptly, there were no complaints, and recovery was complete

CASE 2—Male, aged 44 Entered hospital Oct 11th, 1928. Symptoms began one week before admission, with sudden chill followed by slowly rising temperature Noted general weakness, had some nausea and vomiting and was slightly constipated and during this week white blood cells had ranged from 5200 to 6800 Temp 99°–101° Developed rose spots and other characteristics of mild typhoid. Agglutinations para B, positive para A, negative, typhoid, negative; *B melitensis* negative On the afternoon of admission, 5 c cm of Lactogen was given intramuscularly The following morning the patient showed no reaction There had been no increase of temperature and only a slight increase in the white cells. Typhun (0 5 c cm) was then given intravenously, and this was followed in four hours by severe chill and rise in temperature to 104° Twenty four hours later the white cells numbered 18,030 Twenty four hours after the injection of typhun, 40 c.cm of 50 per cent dextrose and strychnine nitrate gr 1/40 was given intravenously This was followed by a sharp fall in temperature and prompt recovery There was no depression. Culture from stools five days later was negative No other treatment was given

CASE 3—Male, aged 19 Entered hospital Sept 11th, 1929 About two weeks before began to feel weak and drowsy On admission white cells, 5000 to 6000 Mild typhoid suspected Agglutination tests para A 100, negative, para B 1 100, negative typhoid 100, negative, *B melitensis* 1 100, positive On Sept 11th lactogen 5 c cm was given intramuscularly Six hours later temp 100 4°, pulse 80, resp 20 Temperature gradually subsided On the morning of the 12th the white cells numbered 5050, and at noon typhun 1 c cm was given intravenously 1 50 P M temp 103 2 pulse 116, resp 28, severe chill 2 50 P M temp 104°, pulse 104, resp 24 3 P M white cells 8400 3 20 P M temp 104°, pulse 128, resp 26 Temperature gradually subsiding On the 13th, at 7 30 A M, temp 98 4° pulse 76, resp 18 Glucose (50 c cm of 50 per cent solution) plus strychnine sulphate gr 1/60, intravenously 4 P M temp [illegible] pulse 72, resp 16 Following day temp 98 2° No further elevation Complete recovery Six months later agglutination tests for *B melitensis* were negative

The advantage of the vaccine treatment is that it cures the patient before he drifts into the stage where there is danger of perforation and hæmorrhage Cultures from the blood and stool may become negative in an almost incredibly short time, often the patient may return to his home in a week after treatment is instituted The disease can be cut short before there has been much loss of weight, strength, and vitality Typhoid vaccine given subcutaneously in sufficiently large doses every other day, although it undoubtedly lessens the number of complications and relapses, does not shorten the classical duration of the disease The [illegible] method, on the other hand, seems to stop the disease and rids the patient of typhoid bacilli

The South American authors mentioned "two accidents" in 105 cases but did not describe them I myself have observed no unfortunate effects, and [illegible] noted none in his first 60 cases I may mention that in the past 24 years I have used many different kinds of vaccine on many cases of many diseases and have noted an anaphylactic reaction in only two—one patient responded with a severe attack of asthma followed by hives, another developed hives with joint pains Both were controlled by [illegible]

I am, Sir, yours faithfully

C L PRICE M D

Ohio U.S.A

LONDON UNIVERSITY AND ITS MEDICAL SCHOOLS

To the Editor of THE LANCET

SIR,—Sir Ernest Graham Little's letter in your last issue comes at a time when revision of the medical curriculum is being widely discussed The first difficulty in London University arises with the first M B examination I have never been able to understand why this examination is not interchangeable with that for the intermediate science The length of time allotted to both courses is the same, and yet the first M B is definitely considered to be of a lower standard The first M B ought to be the chemistry, physics, zoology, and botany of the intermediate science examination The student who changes his mind would then be able to go on with a science degree and not have to start again at the beginning as at present

The second M B is another problem The minimum course of study for a first degree in London University takes three years The normal time for the second M B is two and a half years. If this examination was a degree examination the course of study would have to be lengthened by three to six months Most medical students in this university are poor men and cannot afford the time A few are able to spend another year and take the B Sc *in* physiology, chemistry, or human anatomy, but this number is very small

A degree in medical sciences on the lines of the tripos at Cambridge would undoubtedly encourage students to spend an extra period of three or six months and would add to the popularity of the University I have no doubt that the difficulties in arranging this on the lines suggested by Sir Ernest can be overcome

I am, Sir, yours faithfully

E E D GRAY, M D

Teddington Middlesex, Nov 26th

THE MICROSCOPY OF VIRUSES

To the Editor of THE LANCET

SIR,—An annotation under this title in your issue of May 19th (p 1073) mentions several points in criticism of communications by myself and my co workers Would you therefore let me add the following explanation

(1) In regard to the discovery of the *elementary* bodies of zoster you say that we have ignored the fact that Paschen had already described and figured these The part of the *Zentralblatt für Bakteriologie* containing Prof Paschen's article is dated December, 1933, and we first became acquainted with the work after that date, while our *original* paper in Japanese was issued in July, 1933

(2) With *reference to* the method of demonstrating elementary bodies by the use of an acid dye as a mordant, it is true that in our communication *on the subject* to the Japanese Pathological Society in April *of* this year we overlooked Craigie's paper Apart from the fact that Craigie used the mercurial dye, mercurochrome, while we used eosin, a comparison of the methods will, we think, show that our work was an independent outcome of *investigations* on the staining of elementary bodies, certain of which were *reported in* 1932

(3) You raise doubts as to the susceptibility of rabbits to the virus of varicella In 1932 *we recorded the* establishment of three strains of varicella virus in rabbits by intratesticular inoculation with the contents of vesicles from patients This virus differs from virus III of Rivers both in respect of cross immunity tests and also species virulence—the varicella virus can be transmitted to the guinea pig, cat, fowl, pigeon, and ape, as well as to man and rabbit

(4) Our statement that the viruses *of fowl pox* and molluscum contagiosum multiply preferably in the nucleus is characterised by you as "almost certainly incorrect."

Our co-worker Tsunesaburo Fujino will before long deal with this subject in detail in the *Japanese Journal of Experimental Medicine*

(5) You point out that the estimate of 0 25 μ for the size of the herpes simplex body is not in keeping with the work of Bedson and Elford, Perdrau and Smith. It is scarcely likely, however, that close agreement should be reached when the size of such particles is determined by different methods, especially since staining procedures may be expected to cause an apparent increase in their size.

In conclusion, we feel encouraged in our work by the frank expression of your view that the elementary bodies which have now been described in so many virus diseases really represent the causal agents Recently we have established in the rabbit a strain of pemphigus pruriginosus in confirmation of the original report of Urbach and his co-workers, and we have stained elementary bodies closely resembling those of herpes, although differing somewhat in their arrangement. Similar success has been obtained with a strain of the virus of epidemic encephalitis of Japan in the rabbit and the monkey Both of these observations have been published in Japanese and are in course of translation

I am, Sir, yours faithfully,

The Bacteriological Institute, Osaka University, Japan, Nov 5th. J. TANIGUCHI.

LIVER THERAPY IN ANÆMIA

To the Editor of THE LANCET

SIR,—It is to be regretted that in none of the American and English publications by investigators, authors, and clinicians has mention been made of the early work carried on (1910–12) with liver in anæmia —liver given orally, liver juice, and liver extract intraperitoneally and hypodermically—by Pietro Castellino and Alfonso Pirera, of the University of Naples To these Italian observers and clinicians must go the credit for first discovering the value of liver in anæmia To the American investigators Whipple (1920, 1925), Minot and Murphy (1926) goes the credit for scientifically establishing liver therapy in anæmia as a universal method Prof Pirera published his report in *Il Tommasi* (Napoli) (1912, vii, 601, 625) The late Prof Castellino commented on his early work (with his teacher and master, Prof Salvioli of Genoa) on liver in anæmia before the Thirty-fifth Congress of Internal Medicine, at Genoa, on Oct 24th, 1929 Castellino also refers to the value of liver in anæmia in his paper on "Nuove vedute sulle funzioni del fegato" (Nuova Vita, 1912, iii, No. 15) Further references are Folia Medica (Napoli), 1930, xvi, 7; Ricerca Scientifica (Roma), 1933, iv, 413; Riforma Medica (Napoli), 1929, xlv, 41; Policlinico (Roma), Dez. Prat, 1929, xxxvi, 709, 1685—I am, Sir, yours faithfully,

HYMAN I. GOLDSTEIN, M D.

Camden, New Jersey, U S A, Nov 5th

COLOUR-BLINDNESS

To the Editor of THE LANCET

SIR,—The Medical Research Council has issued a report on colour-blindness in which it is stated that the apertures of two lanterns bearing my name differ They were made by different makers, and I can find no evidence that the defective lantern was ever examined by me It was made by makers whom I gave up as they sold lanterns without submitting them to me Obviously I cannot be responsible for a lantern I have not examined and certified as accurate I sometimes have to reject a whole batch There are lanterns bearing my name which are grossly inaccurate

I am, Sir, yours faithfully,

F. W. EDRIDGE-GREEN.

Board of Trade, London, S W, Nov 23rd

ASTHMA REVIEWED

To the Editor of THE LANCET

SIR,—The leading article in your last issue is called for at present. Asthma was long regarded as a "nervous" affection, and this was owing to the ignorance which has, in the past, given the same title to other diseases which we now know to be produced by morbid agencies The intrinsic cause of asthma is unknown, although every variety of substances is able to call it forth Protein supersensitiveness is physiological, and it is only in the greater delicacy of this supersensitiveness that asthmatics differ from normals Constant searching after substances which may cause supersensitiveness is of little use, as most asthmatics are sensitive to various and entirely different substances, such as horse hair or lobster. How then can treatment with one of these substances be said to be "specific"? There is really no specific treatment for asthma, as we are ignorant of its cause The Prausnitz-Küstner test remains, and the skin reaction remains, after courses of these so-called specifics

Prof Prausnitz at the meeting of the Pathological Society of Manchester on Nov. 14th (reported p 1167 of your last issue) described the Prausnitz-Küstner reaction as an urticarial wheal, but in this case of eczema the characteristic lesion of the disease is not produced, which shows that there is another agent at work Then what about the number of asthmatics who show neither inheritance nor supersensitiveness, and the status asthmaticus? Prof Prausnitz said treatment must be made by desensitising with the specific substance or a non specific substance—e g, peptone

I am, Sir, yours faithfully,

Harley-street, W, Nov 26th. A. G AULD.

ULCERATION FOLLOWING GASTRO-JEJUNOSTOMY

To the Editor of THE LANCET

SIR,—I should like to thank Mr Harold Edward for his reference to my note (published in your issu of Nov. 10th), and also for the interesting accoun which he gives of lesser curve ulcer of the stomac occurring 11 years after gastro-jejunostomy fo duodenal ulcer It may be that undue prominenc was given in my note to the interval that had elapse between the time of operation and the recurrenc of ulceration, but what I really wished to stress wa the fact that ulceration had recurred in the *duodenum* and not in the stomach, after gastro-jejunostom had been performed The majority of surgeons ar agreed that, provided the gastro-jejunostomy be don efficiently, the duodenal ulcer heals, and in the even of further ulceration, whether it be due to inefficien operation or high acidity, or anything else, th ulceration occurs near to or at the site of anastomo I considered the condition which I reported wa extremely rare, for I had nowhere seen any mentio of a similar case.

Mr Edwards's case is undoubtedly unusual in tha the patient remained free from ulceration for 1 years, but lesser curve ulcer of the stomach (a distinct from anastomotic ulcer) following gastro jejunostomy for duodenal ulcer does occur Severa of such cases have been reported by Mr. A Jame Walton, and also by Dr George Vilvandré[1] Personall I have had experience of one definite case of thi condition, and another case in which I am afrai the evidence was not at all clear that the original operation had been done for duodenal ulcer The first case was interesting because the anastomosis was so much the "no loop" variety that I considered it difficult, if not dangerous, to undo and reconstruct The ulcer was on the posterior surface of the stomach, proximal to the stoma, and was penetrating the pancreas After excising it and closing the opening in the stomach, I performed a partial gastrectomy distal to the anastomosis The patient remained free from stomach trouble for more than three years, but I have since lost touch with him

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[1] Trans Med. Soc Lond, 1934, lvii, 241, see also THE LANC 1934, i, 890.

The possible coexistence of chronic gastric and duodenal ulcer must not, of course, be overlooked It appears to be much commoner on the continent, particularly in Germany, than it is in America or in England, in Schmieden's clinic in Frankfurt, I believe, the relationship is 1 to 4, and in some clinics in Germany even 1 to 1 According to Konjetzny, it would seem that most cases of duodenal ulcer in Germany are associated with ulceration and hæmorrhagic gastritis involving the antrum of the stomach It is these facts, in combination with the fear of gastrojejunal ulceration, which have led German surgeons to adopt gastrectomy in preference to gastrojejunostomy as a treatment for duodenal ulcer

In the cases reported by Dr Vilvandré there was no evidence whatever of previous gastric ulceration, and, of course, in the one described by Mr Edwards, the question does not arise In the event of operation, however, it would be interesting to know whether the ulcer in this case proves to be malignant

I am, Sir, yours faithfully,

MICHAEL J SMYTH

Wimpole street, W, Nov 27th.

MOVING RADIOGRAMS

To the Editor of THE LANCET

SIR,—With further reference to my recent work on X ray cinematography, to which you have kindly made reference several times during the year (THE LANCET, 1934, i 372, 975), I am now able to obtain a cinematograph record of the *electrocardiograph tracing and the heart's shadow* simultaneously on the same film

I am, Sir, yours faithfully,

RUSSELL J REYNOLDS

Harley-street W, Nov 24th

GENERAL MEDICAL COUNCIL

PRESIDENT'S ADDRESS

IN opening the one hundred and fortieth session of the Council on Nov 27th, the President said —

There has only been one breach in the ranks of our members past and present since our last meeting Mr Dolamore who has been one of the additional members appointed under Section 16 of the Dentists Act, 1921, and who succeeded Sir James Hodsdon in 1929 as chairman of the Council's Dental Education and Examination Committee, has met the fate of many a distinguished public servant at the poll His quiet efficiency and whole hearted service will not be forgotten by his old colleagues Mr Rilot takes Mr Dolamore's place as one of the three additional members He is no stranger to us, for in 1931–33 he acted with Mr Farquhar Macrae, now secretary of the recently established Medical Council of India, as Deputy Visitor of Dental Examinations The others of us whose presence here depends on a popular vote have been more fortunate Sir Henry Brackenbury and Mr Bishop Harman have been returned by large majorities, and the electors of Ireland and Scotland have been sufficiently satisfied with the work done by Dr Kidd and myself, and by Mr Sheridan and Mr McGowan as additional members, to honour us with an uncontested election

The English elections draw attention once more to the desirability of some change in the methods of selection of our direct representatives By the 1886 Act, which established direct representation, three members were allotted to England and one each to Scotland and Ireland, and Section 10 (1) (c) enables the Council to represent to the Privy Council that it is expedient to confer on the registered medical practitioners resident in any part of the United Kingdom the power of returning an additional member to the General Council" Under the provisions of this section an additional member was allotted to England in 1900 and again in 1931 so that England has now five direct representatives The Crown members and the representatives of Universities and Corporations "shall be chosen and nominated for a term not exceeding five years (Act of 1858, Section 8) Direct representatives (Act of 1886, Section 8) "shall be elected to hold office for the term of five years, and shall be capable of re election and any of them may at any time resign his office by letter addressed to the President of the General Council, and upon the death or resignation of any one of them some other person shall be elected in his *place*" There are no Chiltern Hundreds or Stewards of the Manor of Northstead for a member of the General Medical Council who wishes to test the feeling of his constituents on any vexed question, and Parliament in 1886 seems to have taken it for granted that direct representatives were immortal It was not long before difficulties arose

At the election held in November and December, 1896, Dr R R Rentoul and Mr George Brown were elected, and Dr J G Glover was re elected Sir Walter Foster and Mr Wheelhouse did not seek re election On Sept 1st, 1897, Dr Rentoul resigned his seat, and at the by election held in October Mr Victor Horsley was elected On Sept 25th, 1902, five years later, Sir Victor Horsley was re elected by a very large majority When the time approached for a general election in November, 1906, Sir Victor Horsley, whose terms of five years dated from October, 1897, resigned his seat in order to save the Council the expense of a second election such as was necessary in 1902 The president in his address on Nov 27th, 1906, said that "but for his forethought it would have been necessary under the provisions of the Medical Act, 1886, to hold a by election, not only in 1907, but in every fifth year thereafter His resignation at the present time has rendered it possible so to arrange matters that, now and henceforth, a general election of three English members every five years will suffice" That sanguine hope was not realised, death was very busy among the direct representatives and of the twelve elected since 1907 four died during their period of service The result of the operation of the sections of the Act to which reference is here made is that the Council are put to the cost of *four* separate elections for the purpose of electing five representatives.

There are two further matters more concerning others rather than ourselves.

First, the terms of the 1886 Act make it impossible for us to give a favourable answer to a request from any of the Dominions for recognition of their Diplomas in Public Health

Secondly, the Medical Council Act, 1862, Section 3, lays down in essence that on the date of publication of the British Pharmacopœia it shall immediately become official This is obviously inconvenient to manufacturers, and though arrangements have been made during the preparation of the last two Pharmacopœias to give confidential access to the proofs, there are interests which would be better satisfied if a period of three to six months intervened between the date of publication of the volume and that of its becoming the official Pharmacopœia I have been in communication with the Lord President of the Council regarding the difficulties, and am hopeful that Parliamentary action may be taken to remove them.

Before we meet again King George V. will have reigned over us for twenty-five years, and his subjects will celebrate His Majesty's Silver Jubilee The Council will, I am sure, following precedent, desire to present a Loyal Address

Under the supervision of the treasurers the window behind me, the gift of Sir Donald MacAlister, has been brought up to date. The erection of new buildings on the other side of the street suggests that in future this Chamber will be cooler on summer afternoons

There will be no debate on Medical Education this session The committee appointed by the Council on June 2nd have been busily engaged in studying the abundant literature on the subject each member has contributed a memorandum on what he considers the salient points; and a gratifying measure of agreement has been disclosed

I feel sure that all members will approve that I should refer here to the loss we have sustained by the death of our house officer, William Andrew Scott We have all appreciated the quiet efficiency of his service during more than nineteen years. Members will hear with satisfaction that the treasurers have made arrangements under which Mrs Scott's services will be retained.

Our sympathies go out to Sir Farquhar Buzzard, who is waging a personal fight with enteric fever The latest information is that he is making good progress, and may be regarded as convalescent. We hope to welcome him back in May himself again.

The customary vote of thanks to the president was proposed by Prof Sydney Smith and seconded by Dr J M Beattie

The Council received official notice of the appointment of Dr. Charles Frederick Rilot, L D S, as an additional member to the Council by the Privy Council under Section 16 of the Dentists Act, 1921. Dr Rilot was introduced by Mr. E. L Sheridan

The Council then proceeded to the consideration of reports submitted by the Dental Board of the United Kingdom

BRITISH ORTHOPÆDIC ASSOCIATION

THE annual meeting of this association was held in London on Nov 2nd and 3rd, under the presidency of Mr HARRY PLATT (Manchester) Clinical programmes were arranged at St Bartholomew's Hospital by Mr. R C ELMSLIE and his colleagues, and at the Lambeth Hospital by Mr G F STEBBING The Robert Jones gold medals were presented to Mr. R W BUTLER (London) and Mr H J SEDDON (London) whose essays on the subject of Pott's paraplegia were read in opening the first discussion

Pott's Paraplegia

Mr BUTLER said that in tuberculous disease of the spine three clinical types of paraplegia should be differentiated The first type, "early onset of temporary paraplegia," was due to toxic and vascular reactions in the cord from the activity of tuberculous disease, and sometimes to compression of the cord by caseous granulation tissue In the second type, "early onset of permanent paraplegia," the paralysis persisted after recovery of the tuberculous disease owing to avascular atrophy of the cord; it was attributable to prolonged compression of the cord by abscesses, to acute thrombosis of the vessels supplying the cord, to bony compression by pathological dislocation of the spine, or to compression by the displacement of sequestra In the third type, "late onset of paraplegia," the paralysis might appear many years after apparent quiescence of the disease, and this type included 50 per cent of the whole series of 193 cases Late paraplegia was due to atrophy of a previously damaged cord as a result of prolonged or of fresh infection, bony compression was a rare cause and there was no evidence that chronic tuberculous meningitis was responsible for paraplegia at any stage

Mr SEDDON said that for every four cases of early onset of paraplegia which recovered there was one which failed to recover Failure was due either to persistence of cord compression for too long a period, or to the sudden complications of vascular thrombosis or bony compression by dislocation Treatment therefore was primarily conservative and included immobilisation and hyperextension. If some voluntary power remained the prognosis was excellent, but if there was complete loss of voluntary power recovery was improbable unless pressure was relieved during the first six months If there was not spontaneous recovery within six months of onset, costotransversectomy and evacuation of the abscess was indicated When the onset of paraplegia was sudden and paralysis was complete within a few days, bony compression should be suspected and relieved by hyperextension of the spine Laminectomy was only indicated in cases exhibiting the spinal tumour syndrome (the neurological signs preceding the orthopædic signs), or in cases of posterior spinal disease Cases of late onset of paraplegia should be treated conservatively, but in severe cases the removal of tuberculous material or of bony ridges, and combined laminectomy and spinal grafting should be considered If there was complete motor paralysis for more than six months there was no likelihood of recovery

In the brief discussion which followed Mr G R GIRDLESTONE (Oxford) pleaded for the relief of pressure by costotransversectomy at an even earlier stage, and Mr MCCRAE AITKEN (London) said that the pressure could be effectively relieved without actually removing bone, by dissecting between two transverse processes

Transport of Back Injuries

Mr T P MCMURRAY (Liverpool) said that in fractures of the spine advantage of face down transportation was that the postural movement necessary to reduce the fracture was instituted at once so that the risk of injury to the spinal cord was minimised. The disadvantages were such that patients suffered from shock and that lying on the face might embarrass respiration; there might be fractures of several ribs with danger of visceral injury The speaker did not advocate any change in the existing teaching; first-aid workers could not be expected to diagnose fractures of the spine and the act of turning patients over was dangerous

Mr McMurray's recommendation was supported by Mr P B **Roth** (London) It was opposed by Mr R **Watson Jones** (Liverpool), Mr **McKenzie Crooks** (Nottingham), Prof W S **Haughton** (Dublin), Mr H O **Clarke** (Manchester), Mr **Davidson** and Mr **Hope Carlton** (London)—Mr Watson Jones said that St John Ambulance men were already taught to turn these patients over, but they were instructed to turn them on to their backs and to lift them by a method which inevitably produced hyperflexion If a patient with a fracture dislocation was carried in this manner severance of the cord was inevitable The association of rib and spinal fractures was so rare as to be negligible, and in any event the ribs were no more likely to be fractured in front than behind —Prof Haughton said that the diagnosis should not give rise to difficulty If after a severe injury a conscious patient complained of pain in the back and inability to move one or both legs he should be lifted and carried face downwards —Mr Crooks reported a series of 50 cases of spinal injury, there was only one case with injuries to the ribs and that patient was more comfortable on the face than on the back —Mr Clarke said there could be no doubt that ordinary face uplifting was capable of producing paraplegia which did not previously exist The speaker had personally witnessed a throw from a horse which caused fracture of the spine without paraplegia, the patient was turned and lifted by ambulance men and was paraplegic by the time hospital was reached Death resulted from bladder infection

Congenital Club-foot

Miss M. **Forrester Brown** (Bath) advocated repeated manipulation, splints, and plaster as the routine treatment for congenital club foot but said that many cases relapsed despite every care and attention Open division of the tight structures on the inner side and at the back of the heel was often necessary, and in old cases an astragalectomy was sometimes performed A rotation osteotomy of the tibia was a valuable procedure for persistent intoeing

Mr **Bryan McFarland** (Liverpool) said that open operations on the inner side of the foot were followed by scar tissue contracture, and sometimes the deformity relapsed Tenotomy of the tendo Achillis was rarely indicated and was a dangerous procedure —Mr C **Lambrinudi** (London) advocated early tenotomy of the tibialis anticus and posticus, but these procedures were condemned by Mr **Naughton Dunn** (Birmingham), who said that division of the anterior tibial tendon caused claw foot and division of the posterior tibial tendon caused flat-foot.—Mr F P **Brockman** (London) considered astragalectomy to be a very bad operation and said that all cases so treated relapsed sooner or later He recommended open division of the tight structures on the inner side of the foot

Fractures of the Neck of the Femur

Mr **Watson Jones** said that after high fracture of the neck of the femur there was often radiographic evidence of impairment of blood-supply in the proximal fragment and this accounted for the slow union of these fractures Nevertheless the neck distal to the fracture had a normal blood-supply, and its decalcification and absorption was due to the traumatic hyperaemia of continued movement of the fragments on each other, it was not observed when the fracture was perfectly immobilised The prolonged and complete immobilisation necessary could be secured by the Smith Peterson nail, but the operation was most difficult The speaker had devised a canalised nail and guide to facilitate accurate central insertion by open operation A similar principle had been independently used by West in Australia and Sven Johansen in Sweden, but these workers had developed a subcutaneous technique with Kirschner wire and radiographic control which was more difficult and less certain The treatment was relatively safe even in very old people because no splints or plaster were used, no weight bearing was permitted until the fracture was united The operation was contra-indicated in old fractures with avascularity of the head of the femur Non-union after arthrodesis of the osteo arthritic hip was analogous to non-union after fracture of the neck of the femur and could be prevented in the same way by driving a Smith Peterson nail into the pelvis With this addition to the technique of simple intra articular arthrodesis consolidation was certain and rapid

Prof **Hey Groves** (Bristol) had seen the Sven Johansen technique on the continent, two or three hours of tedious work had been involved and the speaker believed that the open operation which had been described would prove more satisfactory —Mr **Naughton Dunn** said that the operation was one of great difficulty even in the hands of Smith Peterson himself, and the high percentage of successful results reported commended the method.—Mr V H **Ellis** (London) advocated earlier weight bearing in a walking calliper splint, but the opener replied that the Thomas's splint or calliper was dangerous in such high fractures and was not to be recommended at any stage of treatment, the splint extended up to but not beyond the fracture and directly transmitted every movement of the limb to the level of injury

The Lumbar Spine and Pregnancy

Mr **Lambrinudi** reported clinical observations which disproved current obstetrical teaching that lumbar lordosis was normal in pregnancy Normally there was extension of the lumbar spine and flattening of the sacrum, but this movement was only possible if the muscular tone was good and the sacro-iliac and lumbo sacral joints were mobile Failure in this mechanism with the development of an abnormal lumbar lordosis accounted for backache during and after pregnancy

Mr N **Capener** (London) showed comparative series of radiographs of the lumbar spine with patients lying, standing, and stooping The intervertebral foramina were enlarged in flexion of the spine and narrowed in hyperextension The bearing of this observation on sciatic scoliosis was discussed

Adolescent Coxa Vara

Mr **Ellis** reported nine cases of slipped upper femoral epiphysis and advocated gradual correction of the deformity by skeletal *traction* in a Thomas's splint Forcible correction by manipulation under anæsthesia usually caused *degeneration* of the epiphysis and osteo arthritis of the hip

Mr F N **Wardle** (Liverpool) advocated traction in the neutral or even the adducted position by means of a Thomas's frame with the groin strap on the affected side

Prof J C G Ledingham, F R S., director of the Lister Institute will deliver the Herter lectures at the Johns Hopkins University, Baltimore in the first week of December His subject will be Studies on Virus Problems

OBITUARY

JOSEPH STRICKLAND GOODALL, M.R.C.P.

WE regret to record the death of Dr. Strickland Goodall, the well-known cardiologist, which occurred on Nov 23rd at his country house in Norfolk, after a long illness

Joseph Strickland Goodall was born in 1874, the son of Joseph Goodall, senior surgeon in the Queensland Government Service, and Anne Strickland Blaydes, of Hedley, Yorkshire For six generations his forefathers had been members of the medical profession, one of them, Charles Goodall, having been president of the Royal College of Physicians of London from 1709 to 1712 Goodall spent his boyhood in the country near Brisbane and on Thursday Island before coming to England to enter Harrow School. From school he proceeded as a medical student to the Middlesex Hospital, gaining the senior entrance scholarship at the hospital and being an exhibitioner in natural science He graduated as M.B London in 1900, held the usual house appointments at the Middlesex Hospital, and followed these up by post-graduate work in Edinburgh and Paris

DR STRICKLAND GOODALL

In 1910 Goodall obtained the diploma of F.R C S Edin, and was elected F.R S Edin, by which time he had commenced a long association with Middlesex Hospital As a member of the teaching staff, he was senior demonstrator of physiology in the school for seven years, and lectured on that subject and on pathological chemistry. He became sub-dean of the school, and was a most attractive teacher, his classes being, in particular, attended by many students from overseas In the course of this work he developed his close interest in electrocardiography, and here he became a pioneer He was appointed physician at the National Hospital for Diseases of the Heart, Westmoreland-street, W., in 1914, in which year he obtained the diploma of M R C P London, and here the same success attended his clinical demonstrations in the hospital which had marked his educational courses at Middlesex Outside the hospital he was recognised as a teacher, for an association with the Society of Apothecaries, as a member of the Society, led him to be their examiner in physiology and biology, while at the City of London College, an institute of the City Polytechnic, he held for a period the position of teacher of biology and physiology. During the war he was selected by the War Office as a consulting cardiologist and was appointed to the Australian Auxiliary and Red Cross Hospitals in Regent's-park. He retired with the rank of major.

Dr Goodall was one of the first consulting physicians in London to practise more or less exclusively as a cardiologist. He wrote no formal treatise, but he made many contributions to medical journals, his writings being largely concerned with the myocardium and the association of heart diseases with thyrotoxicosis Here he was one of the first in this country to draw attention to the condition, and reference may be made to the important contribution to our columns upon the subject furnished by him in collaboration with Mr. Lambert Goodall (THE LANCET, March 5th, 1927). He wrote the section on cardiovascular diseases in the seventh, eighth, and ninth editions of Savill's Text-book of Medicine, delivered the St. Cyres Lecture at the Westmoreland-street Hospital, described in these columns certain cases of heart-block, and contributed to the *British Medical Journal* at the close of the war, in association with five others, a valuable investigation undertaken at the Westmoreland-street Hospital of 10,000 recruits with doubtful heart condition

Mr Lambert Rogers writes this personal tribute: "To his many friends the death of Dr. Strickland Goodall will mean a sense of profound loss, for his was an outstanding personality. His students loved him and looked on him as a tower of strength His were the great attributes of self-reliance, power of initiative, courage in responsibility, and fertility of resource The originality of his thoughts, the clarity of the language in which they were clothed, the dignity of his bearing, and the directness and simplicity of his manner made a deep impression. His presence left patients with more hopefulness, and he was an inspiration to his students The study, the teaching, and the practice of medicine were an absorbing passion with Goodall, and those of us who knew him well will have a deep sense of gratitude for having known him"

Dr C. E. Lakin writes: "I first made Strickland Goodall's acquaintance when he was demonstrator in physiology at the Middlesex Hospital As students I think we were impressed most by his wonderful vivacity and enthusiasm He was the most graphic of teachers and, what is more, his lessons struck home. He passed from one success to another, and through all never spared himself His capacity for work was phenomenal. At a later time he was lecturing on biology and physiology at the City of London College, spending his days demonstrating in the same subjects at Middlesex, making various contributions to learned societies, and carrying on a practice in the evenings at Vanbrurgh Park It was commonly said that he was working sixteen hours a day and must have been one of the hardest worked men in a hard-working profession, and that is saying a great deal Looking back this all seems but yesterday, and now all is over, and we are left lamenting that the years of ease which seemed within his grasp have eluded him His heroic resolution to carry on his work during the last two years in face of a dread disease was the culmination of the courage of his earlier days. The memory of his unbeaten will as well as of his kindliness and generosity will ever live with his many grateful pupils"

Dr Goodall was freeman of the City of London, a member of the Royal Thames Yacht Club, a keen yachtsman and motorist. He is survived by a widow and one son.

JOHN SMITH, M.D. Edin.

THE death occurred on Nov. 16th of Dr. John Smith of Kirkcaldy He received his medical education at the University of Edinburgh and Charing Cross Hospital. He graduated at Edinburgh in arts with first-class honours, obtained the English double diploma and proceeded to M.D Edin in 1886 He was a prizeman of the Royal College of Surgeons of Edinburgh, held the house appointments in the Royal Infirmary, and also in the Edinburgh and Glasgow Maternity Hospital, while in London he was clinical assistant to the Royal Ophthalmic Hospital, Moorfields In Kirkcaldy he held appointments as medical referee under the colonial emigration service and under the Workmen's Compensation Act In his youth he was a remarkable footballer, and one of the small group who distinguished themselves in the same under both rules, being in 1876 reserve man in the Scottish Rugby international team, while under Association rules he represented Scotland ten times between 1877 and 1884 At the time of his death he was in his eightieth year, and the end was preceded by a long illness

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Slum Clearance and Overcrowding

LABOUR CRITICISM

IN the House of Commons on Nov 22nd Mr HICKS speaking on behalf of the Labour Opposition upbraided the Government for its complacency about the plight of the industrial areas and slum clearance He pictured the slums of Great Britain as he had seen them and as he knew they still existed

He thought of the horrors in London, the far-spreading regions which were but *one huge slum* He thought of areas in Manchester and other places in England and Scotland where there were miles of back to back houses What justification was there for the statement that slums were disappearing? They existed in all their stinking filth and rottenness and it was the poorest people in the community who were compelled to dwell in them There were millions of people to day in Britain whose lot it was to live in tumble-down hovels with leaky roofs, patched brickwork, and bad floors, and infested with rats and other vermin These facts were reported daily by medical officers of health Mothers were watching their children grow up pale and sickly in such surroundings Menfolk were being robbed of all the decencies of home life The only slum clearance that was being made was under the Greenwood Act passed in 1930 during the late Labour Government. The figures showed that in 1931 400 houses were built under that Act, in 1932, 5140, in 1933, 6302, and in 1934, 15,058 That amounted roughly to 27,000 houses for slum clearance from 1931 to 1934 The present Government's campaign against the slums was marked from the outset by signs of failure, no sooner had any attack been begun on slumdom than the dark forces of the slum landlords had come up to claim compensation.

A much stronger and bolder policy than anything yet contemplated by the Government was called for to tackle the terrible problem Not only, Mr Hicks concluded, was the Government's slum clearance slow, but their housing policy was conducive to the creation of more slums in the future Houses had been built in a rush and with all sorts of material and these would inevitably produce problems as difficult to tackle as the slum problem of to-day

THE GOVERNMENT REPLY

Sir HILTON YOUNG, Minister of Health, said the programme was to clear 280,000 houses, which were recognised slum houses ascertained by survey, and their abolition would mean the rehousing of 1,250,000 people The period of preparation and organisation was just being completed, and the next period was the conversion of that preparation and organisation into action The houses they had in sight as a result of the first single year in which they were beginning to earn the harvest from their labours was 31,000, three times as many as in preceding years To clear 280,000 houses in five years they had to attain an average rate of at least 56,000 a year and already they had reached practically the average rate The rate already which would assure the success of the five-year plan the concentration of effort on slum clearance in all the great cities was going to gain momentum, he believed until it reached its maximum about a year or 18 months hence These houses were being built under the plans of local authorities as to materials and standards of accommodation which were in accordance with modern ideas and practice In the half-year to September last private enterprise had added to the pool of houses in the country 131,000 houses, and in the course of last year it produced over 250,000 No one contended that these houses were a sufficient provision for some of the most anxious aspects of our housing problem, particularly that of the small house to let to lower paid wage earners, but they did make an important contribution towards the *solution of that problem*

With regard to the forthcoming Bill to deal with the problem of overcrowding, Sir Hilton Young said that it was necessary that the attack on the slums should have reached a certain degree of conversion into action before they launched the attack on overcrowding The evil of overcrowding from the point of view of public health and the welfare and happiness of the people was greater than the evil of the slums Concerted action over the whole country at one time was necessary to deal with the evil Slums and overcrowding were evils which could no longer be tolerated in this country, and whatever measures were necessary eventually to get rid of them would be adopted by the Government.

Depressed Areas Bill

In the House of Commons on Monday, Nov 26th, Mr OLIVER STANLEY, Minister of Labour, presented the Depressed Areas (Development and Improvement) Bill to provide for the initiation, organisation, prosecution, and assistance of measures designed to facilitate the economic development and social improvement of the depressed areas, for the appointment of commissioners for those purposes, and for purposes connected with the matters aforesaid

The Bill was read a first time

HOUSE OF COMMONS

THURSDAY NOV 22ND

Offences against Vaccination Acts

Mr GROVES asked the Home Secretary the yearly number of persons proceeded against under the Vaccination Acts for the last ten years for which the records were available, how many orders to vaccinate were made each year, and how many persons were fined under either Section 29 or Section 31 of the Vaccination Act, 1867—Sir JOHN GILMOUR replied During the ten years from 1924 to 1933 the number of persons proceeded against in England and Wales *for offences against the Vaccination Acts 1867 to 1907, the number of such persons fined and the number of orders directing vaccination under Section 31 of the Act of 1867 were as follows*:—

Year	Persons proceeded against	Fined	Orders to vaccinate	Year	Persons proceeded against	Fined	Orders to vaccinate
1924	240	153	[illegible]	1929	139	100	82
1925	221	143	192	1930	119	85	73
1926	[illegible]	115	134	1931	73	52	65
1927	[illegible]	114	138	1932	[illegible]	61	56
1928	182	131	145	1933	114	[illegible]	63

District Auditors and Milk for School children

Mr RHYS DAVIES asked the Parliamentary Secretary to the Board of Education whether in view of the uncertainty that would hang over local authorities in securing the sanction of the district auditor to extra payments for Grade A (T T) milk for school-children, he would take the necessary steps to remove that uncertainty —Mr Ramsbotham replied. No Sir. This particular matter is one which in my noble friend's opinion must be left to the discretion of the district auditor.

Mr Davies Does not the hon gentleman think it is grossly unfair to throw a matter of policy upon the district auditor for determination, and would it not be much better to let the local authority know definitely whether it can or cannot pay from its own coffers the difference in the price of milk for school-children ?

Mr Ramsbotham I am afraid the position of the district auditor is more or less quasi-judicial and that I cannot intervene in the matter.

Mr. Paling: Is not the Minister of Health doing his best to secure the highest grade of milk for these children, and is this very helpful towards that department ?

Satellite Towns

Sir Francis Fremantle asked the Minister of Health when he expected to receive the report of Lord Marley's Committee on Satellite Towns, as promised at the end of July last.—Sir Hilton Young replied I understand that the committee anticipate that they will be in a position to present their report at a very early date. I have no doubt (he added in reply to another question) it will be in time for consideration in connexion with the forthcoming Overcrowding Bill.

A Nurse's Death after Vaccination

Mr Groves asked the Minister of Health whether he was aware of the death of Winifred Annie Edwards, aged 20 years, a nurse at the Birmingham Hospital, who died at the Queen's Hospital, Birmingham, on Oct 16th, from post-vaccinal encephalomyelitis, that Prof. Haswell Wilson, a pathologist at Birmingham University, stated the condition to be due to a reaction of the vaccine, and that the girl would probably not have died if she had not been vaccinated, what kind of lymph was used; whether he was aware that Miss Edwards was vaccinated in order to take up a position at a Sheffield institution; whether the Sheffield institution made vaccination a condition of employment; and whether there was any possibility of compensation being paid to Miss Edward's relatives —Sir Hilton Young replied The answer to the first, second, third, fifth, and sixth parts of the question is in the affirmative I understand that the lymph used in this case was supplied by "Dr Renner's" establishment, which is licensed under the Therapeutic Substances Act for the manufacture of lymph I am not aware of any enactment under which compensation could be paid in such a case.

Telephone Facilities for Panel Patients

Mr. Llewellyn-Jones asked the Minister of Health whether he was in a position to make a statement as to the steps being taken to ensure a satisfactory telephone service in remote rural areas so as to enable insured persons, in case of sudden or serious illness, to communicate with their panel doctors —Sir Hilton Young replied Since 1924 a limited sum of money has been available from National Health Insurance Funds for the improvement of telephone facilities in connexion with the provision of medical benefit in remote rural areas During the last three years a sum of £837 has been expended for this purpose in response to applications from insurance committees in England and Wales

Unemployed Persons and Medical Benefit

Mr. Llewellyn-Jones asked the Minister of Health the approximate number of insured persons who had ceased to be entitled to medical benefit during the periods ended Dec 31st, 1933, and June 30th, 1934, respectively, who would still have been entitled to this benefit had the Prolongation of Insurance Act been continued —Sir Hilton Young replied The approximate number of persons who were notified by approved societies as ceasing to be entitled to medical benefit on Dec 31st, 1933, by reason of prolonged unemployment and were not subsequently notified as having resumed employment was 89,000 in England and 17,000 in Wales The figures include, however, a substantial number of persons (estimated at about 10 per cent) who failed to prove that they had continued up to the end of 1933 to be available for and unable to obtain employment and who would consequently not have remained entitled to medical benefit if the Prolongation of Insurance Acts had not continued in force.

Serving Naval Ratings and Health Insurance

Mr Rhys Davies asked the First Lord of the Admiralty the number of serving naval ratings who were members of health insurance approved societies and the number who were not, what was the possible membership of the suggested naval approved society for serving and ex serving ratings and marines; how many branch offices were proposed, whether the head office was to be in London, and whether he could state the proposed salaries of the various officials —Sir B. Eyres-Monsell replied On Dec. 31st, 1933, the latest date for which information is available, 36,000 out of a total of 82,500 serving ratings were not members of approved societies. I am not yet in a position to supply the rest of the information asked for by the hon Member

Mr. Rhys Davies asked the First Lord of the Admiralty, what progress had been made with the proposal to form a national health insurance society within the trust of the Royal Naval Benevolent Trust since the annual meeting of 1933, under what part of the charter this scheme would be framed, whether it would be necessary to take any Parliamentary action; whether the lower deck was to be consulted and when, what officials of the Admiralty were present at the discussions with representatives of the trust at the Admiralty on Monday, Nov 12th, 1934, and what transpired at that conference —Sir B Eyres Monsell replied · This subject was discussed at the Admiralty with representatives of the Royal Naval Benevolent Trust on Nov 12th The proceedings were informal, but the main object of the meeting was to give information to the proposers of the scheme as to some of the difficulties in its realisation As these appear to be of a serious nature, the further matters of detail have not so far been considered. As a direct outcome of the meeting it is hoped that steps can be taken with a view to reducing the number of serving men who are not members of approved societies.

MONDAY, NOV. 26TH

Progress of Housing

Mr. Mitcheson asked the Minister of Health the total number of houses built in England and Wales during the six months ended Sept 30th, 1934, and, for comparison, the figures for the corresponding period of 1933 —Mr. Shakespeare, Parliamentary Secretary to the Ministry of Health, replied The number of houses built in England and Wales in the six months ended Sept 30th, 1934, was 156,463 The number built in the six months ended Sept. 30th, 1933, was 113,332

TUESDAY, NOV. 27TH

Increase in Number of Suicides

Sir Arnold Wilson asked the Minister of Health whether his attention had been drawn to Table 25 of the Registrar General's Statistical Review showing that cases of suicide had increased from 3759 in 1921 to 5743 in 1932, with an increase of nearly 60 per cent in age groups of 25 and under, and that cases of attempted suicide had increased since 1920 to 1924 from 41 8 per million to 82 1 per million in 1932, and whether he would instruct the chief medical officer of the Ministry to deal with the question in future reports on the state of the public health —Mr Shakespeare replied. My right hon friend's attention has been drawn to these figures The question has been dealt with from time to time in past reports of the chief medical officer of the Ministry, and my right hon friend can be assured that it will not be lost sight of in the future

MEDICAL NEWS

University of Oxford

Prof O L V de Wesselow has been nominated examiner in medicine for two years from the beginning of Hilary term, 1935

Rolleston Memorial Prize—This prize, which is now of the value of about £100, is awarded every two years for original research in animal and vegetable morphology, physiology and pathology, or anthropology The next award will be made in Trinity term, 1936, and further particulars may be had from the registrar of the University

Radcliffe Travelling Fellowship—An examination for this fellowship, which is of the annual value of £300, and is tenable for two years, will begin on Feb 19th

There will be papers in physiology pathology, and preventive medicine together with a practical examination in pathology, an essay subject will also be proposed Candidates may in addition, offer a special branch of medicine or surgery but notice of this should be given when application is made They must have passed the examinations required for the B M degree not more than four years previously and they should send their names addresses, and qualifications to the regius professor of medicine University Museum, Oxford not later than Feb 14th It is a condition of the fellowship that the holder shall spend at least 12 months outside the United Kingdom

University of Cambridge

The Raymond Horton Smith prize has been awarded to Mr Hermon Taylor for a thesis on osteitis fibrosa Dr W G Oakley and Dr H B Stallard received honourable mention

University of London

The title of reader in industrial physiology in the University has been conferred on Dr G P Crowden, lecturer in that subject at the London School of Hygiene and Tropical Medicine

Dr Crowden was born in 1891 and educated at Peterborough Grammar School and University College London During the war he saw active service in France and attained the combatant rank of captain In 1921 he graduated B Sc Lond, with first-class honours in physiology and was awarded the University studentship in physiology He qualified as M R C S in 1923 and took his M Sc degree a year later From 1924 to 1929 he was a lecturer in the department of physiology at University College where he also served as sub dean in the faculty of medical sciences Since 1925 he has been hon secretary to the Research Defence Society and editor of the *Fight Against Disease* In 1928 he became secretary of the nutrition committee of the Medical Research Council and the chairman of the council of the British *Association for* Physical Training He has been especially interested in problems of muscular work and in the application of physiology to hygiene and industry The term 'industry' he has interpreted widely as covering not only the conditions of occupation but the prevention of disability, especially in earlier life, hence his investigations have embraced such diverse objects as the investigation of hearing in school-children the improvement of the diet of the working classes, and the maintenance of comfort in the tropics.

Society of Apothecaries of London

At recent examinations the following candidates were successful —

Surgery—L Banszky Middlesex Hosp, J E Darlow Guy's Hosp, C McK Johnston and L A Lewis King's Coll Hosp, H S Minden St George's Hosp J F L Walley Univ of Cambridge and St Mary's Hosp and G Williams [illegible] W C Winterbottom St Mary's Hosp

Medicine—J E Darlow, Guy's Hosp D S O George, [illegible] Thomas's Hosp, M T Hirst King's Coll Hosp H M R [illegible] Univ of Manchester and Charing Cross Hosp G [illegible] St Mary's Hosp and J E G Wright Westminster

Forensic Medicine—J A Amor St Mary's Hosp F St M [illegible] Middlesex Hosp, J E Darlow, Guy's Hosp F M [illegible] Univ of Durham W F Whaite Univ of Manchester [illegible] and W C Winterbottom, St Mary's Hosp

Midwifery—C J Dandekar Univ of Durham J E [illegible] Guy's Hosp F A Frank Univ of Liverpool, and G Hewitt London Hosp

The following candidates having completed the final examination have been granted the diploma of the society entitling them to practise medicine surgery and midwifery —L Banszky, J E Darlow F A Frank H G [illegible] C McK Johnston, F M Kerry and L A Lewis

The Master (Sir G S Buchanan), the senior warden (Mr H Wilcox) the junior warden (Dr J S Fairbairn) and the court of assistants of the society held a reception on Friday Nov 23rd, at their hall in Water lane, E C, to meet members of the Society of Medical Officers of Health A large number of medical officers from different parts of the country accepted the invitation, among others being Dr. R Veitch Clark, president of the Society of Medical Officers of Health, and the officers of that society

University of Liverpool

Dr Julius Libman, medical registrar to the Royal Infirmary, Liverpool, has been appointed to the newly created post of research assistant to the professor of medicine at the University The appointment is a full time one and is made for a period of three years

Royal Sanitary Institute

Dr James Fenton will preside at a joint meeting of this institute with the south-eastern centre of the Sanitary Inspectors Association which will take place on Tuesday, Dec 11th, at 6 P M at 90, Buckingham Palace road, London, S W Mr H G Clinch, chief sanitary inspector of West Ham, will open a discussion on the Moyne Report on Housing

"Lectures Adapted to a Juvenile Auditory."

The 109th course of lectures arranged for young people by the Royal Institution will be given by Mr W L Bragg, F R S, Langworthy professor of physics in the Victoria University of Manchester He will speak on electricity, and the lectures will be delivered at 3 P.M, at the Royal Institution, 21, Albemarle-street, London, W, on Dec 27th and 29th, and Jan 1st, 3rd, 5th, and 8th

The Rickman Godlee Dinner

A dinner was held at the Dorchester Hotel on Nov 27th to commemorate the jubilee of the first operation for the removal of a tumour from the brain, performed by Sir John Rickman Godlee on Nov 25th, 1884, at the Hospital for Epilepsy and Paralysis, now in Maida Vale Lord Horder presided over a gathering of some 160 persons, including many distinguished neurologists and neurological surgeons Tributes were paid to the memory of Sir John Rickman Godlee by Dr Wilfred Harris, Sir James Crichton Browne, F R S, and Sir Charles Ballance Dr Harris outlined Godlee's career, from the time when having studied medicine at University College Hospital he went to Edinburgh to work under Lister, and returned, imbued with the new principles of surgery, to compete unsuccessfully for a staff appointment at U C H He was elected to the staff of Charing Cross but was recalled to University College Hospital when the next vacancy arose, and eventually left his fortune to this hospital As president of the Royal College of Surgeons of England in 1913 Rickman Godlee attended the opening meeting of the American College of Surgeons, and was made an honorary fellow Among many telegrams received wishing success to the memorial gathering was one from Dr Harvey Cushing The operation they were commemorating was the direct outcome of researches published by David Ferrier in 1873, the study of these led Dr Hughes Bennett to interpret the symptoms shown by the patient as due to a tumour of the brain situated in the fissure of Rolando and to suggest that Rickman Godlee might attempt to remove it surgically Hughlings Jackson David Ferrier and Victor Horsley were present at the operation, of which the news soon became widespread An anonymous letter to the *Times* on Dec 16th, 1884, signed F R S pointing out the importance of the advance achieved was followed by a very large correspondence in which anti vivisectionists took an active part Dr Harris had recently discovered the author of this letter to be Sir *James Crichton Browne* The enterprise had proved that the brain was no pulpy *indeterminate* mass but an organ of localised function From this beginning cranial surgery had progressed to a point which had enabled an American surgeon, W E Dandy to remove the whole of one cerebral hemisphere no recognisable change in the mentality of the patient having ensued

Sir James Crichton Browne who received a stirring ovation said that he was the sole survivor of some notable neurological events with which Godlee was associated. For example, he was the sole survivor of the first editors of *Brain*, and of the founders of the Neurological Society, as well as of those who saw the historic patient before and after the epochal operation under discussion The experiments performed by Ferrier at Wakefield might be said to have inaugurated a new and scientific phrenology. That eminent surgeon and sound philosopher, Mr. Wilfred Trotter, had in the afternoon elaborated the details and message of the achievement (see p. 1207) Determined that it should receive due publicity Sir James had written a letter to the *Times* which had ignited a controversy which had raged for three months He trusted that Dandy's recent success would not give the impression that the brain was a rudimentary or superfluous organ that ought to be removed systematically in childhood Sir Charles Ballance spoke of Rickman Godlee's fine character and wide learning He reviewed the main events in the history of brain surgery and the list of great men who had contributed to its progress

The Chairman, speaking as a representative of clinical medicine, said that the thrill with which this advance must be recalled reminded us that in this country neurology had always had a status and prestige second to none elsewhere At the Hospital for Epilepsy and Paralysis in Maida Vale there was a team of workers whose efforts were admirable The race between medical neurologists whose activities were concentrated on securing more exact diagnosis and the surgeons who devised advances in technique enabling the knowledge to be applied as soon as it was acquired was an exciting one

Dr Anthony Feiling and Mr H W. Burleigh, secretary to the hospital, spoke eloquently of its present needs Prof Langdon Brown as an old colleague of the chairman praised his clinical subtlety, his unfailing kindness to his colleagues in the profession, and his keen and active interest, too rare among medical men, in the social questions of the day.

Imperial Cancer Research Fund

At a meeting of the general committee held on Nov. 22nd, the Duke of Bedford presiding, the thirty-second annual report of the fund, to which we referred last week, was adopted Sir Humphry Rolleston, chairman of the executive committee, announced that Dr J A Murray, F R S, who had been director of the fund since 1915, would retire in November next

Dr. Murray's connexion with the fund, he said, dated from 1903 Together with Dr E F Bashford he laid the foundation for the experimental investigation of cancer by proving that cancer is a disease to which all vertebrate animals are subject, and that it presents the same essential features in all the different species The material collected in those early years on the natural incidence of cancer in mice had enabled Dr Murray to demonstrate the hereditary factor in the incidence of the disease His study of the early stages of the process of transplantation established the important fact that the experimental transmission of the disease represented actually a transplantation of living cells Peyton Rous's subsequent discovery of tumours of the fowl which could be transmitted without the intervention of living cells, had led to numerous reinvestigations of Dr Murray's early work, which had served only to confirm it Of equal importance were his investigations on the phenomenon of immunity Furthermore, he was the first observer in this country to verify the claims made by Prof Yamagiwa and his colleagues that cancer of the skin could be produced experimentally by the repeated and prolonged application of tar. His extensive knowledge of the biology and morphology of the cancer cell had been of the greatest value in enabling him to criticise the numerous spurious claims which had been made concerning the cause or the cures of the disease He had always placed not only material, but also his knowledge and shrewd judgment at the disposal of his medical and scientific colleagues

Dr Murray had maintained the tradition of the fund for sound, patient and careful work which had given it a leading place among the numerous institutions devoted to the study of cancer throughout the world

Prof E. H Kettle was elected a member of the general and executive committees.

Society of Medical Officers of Health : Annual Dinner

Sir Hilton Young, in proposing the health of the Society at the May Fair Hotel on Nov 22nd, spoke of the friendly face of the M O H as a help and encouragement to him on his travels over the country as Minister of Health. He was conscious of a steady improvement in the relations between the centre of his spider's web at Whitehall and the medical officers at the periphery who understood his difficulties, the position being rendered easier by the Act of 1929, which gave more initiative to local authorities and defined more closely the function of the central government He alluded briefly to two topics of immediate urgency. Maternal mortality, he said, had been forced on his attention by irrefragable statistics We know, he added, where the remedy lies—namely, in increased care and attention given before, during and after childbirth. The remedy was not capable of indefinite postponement; the standard in backward areas must be brought up to that of the country as a whole He now foresaw in five years an end to the intolerable evils of the slums You have to put up the game, he said to the medical officers, where it can be shot. He was astonished at the success of the first year. more than 15,000 houses had been built to rehouse slum population; 19,000 were building, 34,000 in all against a previous yearly average of 11,000. The rate of building was still increasing and the maximum would not be reached until next year. When in five years' time the slums had been cleared he would be calling on M O H.'s for fresh duties. In the coming Bill would be laid down a standard of overcrowding, its extent to be accurately defined by the survey now being made. He knew he would not call on the medical service in vain Dr R Veitch Clark, in replying, said he could recall no Minister of Health who took such a vivid interest in the work of his department or who had so familiarised himself by field work with the actual facts Maternal mortality could, he felt sure, be enormously reduced by effective application of means already to hand, but we knew nothing at present to counteract the intoxications of pregnancy. Our weapons must be welded into one and there must be an organised maternity service Rehousing was the complement of all the public health activities of the last 50 years, people must be put back into conditions in which they can live healthily. We were, he believed, living in the greatest age public health had ever seen, environment had been brought up to a reasonable level, the hospital system was being reorganised, but we were still only on the threshold of the development of the social conscience for individual and communal welfare He envied every man and woman under 35 in the health service

Two ex-presidents of the Society were surprised to find themselves present as guests Sir John Robertson, in proposing the health of Dr. T W Naylor Barlow and Dr G F. Buchan, paid tribute to their services in raising the status and the remuneration of the service Dr Barlow, in replying, gave a vivid picture of the early difficulties and how they had been got over, with examples of how the security attained was reflected in the work done by the service. Dr Buchan spoke of the Society's satisfactory financial position and hoped that funds might be allotted to research, for which, he said, there were just as many opportunities to-day as there were in the time of Harvey, Hunter, or Lister Dr. T N V Potts proposed "The Guests," to which Dr. J S Fairbairn responded In his dual capacity he had, he said, seen a good deal of the medical officer of health As chairman of the Central Midwives Board he had often had to tell him that while he knew a great deal about preventive medicine he had much to learn about preventive obstetrics As president of the British College of Obstetricians he had found himself on occasion setting right some of his colleagues who regarded him as the embodiment of a local bureaucracy Sir Gerald Hurst, M P, who also replied and spoke of Dr Veitch Clark's fine record of work in Manchester.

Royal Air Force Medical Dinner

The twelfth annual dinner of the R A F medical and dental branches will be held at the R A F Club at 7.30 for 8 P M on Friday, Dec 7th Information from Squadron Leader R Boog-Watson, Directorate of Medical Services, Air Ministry, 5–6, Clement's-inn, W C 2.

ADDRESSES AND ORIGINAL ARTICLES

THE HIPPOCRATIC IDEAL *

By John A Ryle, M D, F R C P Lond

PHYSICIAN TO GUY'S HOSPITAL

The sources of inspiration in medicine and the medical sciences are many and varied There are advantages at all times, but especially in an age of swift material progress, stern competition and perplexing prospects in pausing occasionally to consider the motives which prompt us and the beliefs which sustain us in our choice of career and in our daily work As a profession closely concerned with the health and affairs of the individual and the community we are exposed not a little to criticisms both of a private and a public kind and, partly at the direction of the modern press, which thrives on scandal and open dissection of human frailties, we have come, perhaps, to incur a larger measure of censure than was allotted to earlier generations of doctors Whether the criticisms we encounter have relation to our manners and peculiarities, our education, our attitude to unorthodox therapy, our jealousies, our technical failures or to other defects in our constitutions and our actions, and unjust though many of them may be, we would be foolish and conceited to suppose that none of them are ever well grounded We are human and fallible Our problems both of science and practice are far too difficult for us to adopt an attitude of complacency or superiority

Science forges ahead, often to the embarrassment of practice, times and habits change and ethics suffer At the present time there are, I would submit many cogent reasons for a review of motives and beliefs and for a discussion of those ideals without which no body of scientists or humanists can profitably proceed The beginning of a new session the meeting of an old and honoured society commemorative in name and aims of the work of a great man, and the precincts of one of the oldest and finest hospitals and medical schools in the world, provide an appropriate occasion and place for such a review

I have said that the sources of inspiration in medicine are many and varied Uncritically, perhaps for our life is full and exacting and we have small time for personal analysis, we all of us perceive that our steps have been directed and our endeavours supported on the one hand by the humane and on the other by the scientific interests of medical work, and even through times of tedium or disappointment, and while recognising that our labour is also our livelihood, most of us continue to be actuated by these interests

The inspiration of our teachers and the traditions of our school, of contemporary discoveries such as those of Banting and of Minot, of the journals and the monographs and, by no means least, of the medical society—upon the moral and practical value of which *Osler* was so rightly insistent—all these lend their quota Too few of us are tempted to explore the attractive field of medical history, and yet not one of us goes forth into the world without some consciousness of his debt to those old masters who are more to the eras of medicine than kings and governments have been to the eras of social and political history The experiment of your own immortal Harvey, the clinical method of Sydenham, the work of the physician pathologists Bright, Addison, Hodgkin, and Wilks in my own school, Jenner's discovery, the contributions of Pasteur and Lister, and the brilliant advances due to the physiologists in the last century have provided us with a wealth of inspiration upon which each of us must continue to draw through life in greater or less degree

But it is my purpose to go back to a far earlier period for a source of inspiration which, through many centuries, was accounted the most profound and inexhaustible of all, and to show you that, with all our multitudinous discoveries and fresh forms of knowledge, we can still find in the work and wisdom of Hippocrates and of those who composed the Hippocratic school a method, a science, an art of practice, and a code of professional conduct upon which, as supplying a foundation and an ideal, no subsequent generation has been able to improve I shall hope to persuade you that occasional readings of Hippocrates are by no means out of date or a waste of time, to stir in those of you who do not already possess it a veneration for one of the noblest figures in that rich and lovely age of Grecian culture; and to remind you that, lacking all the benefits of physiology and pathology, Hippocrates has nevertheless left us lessons in clinical method and record, observations on prognosis, a rational therapeutic system, and, in addition, an outline of medical ethics, from which we can derive instruction and correction to this day

In case you should doubt the reasonableness of an appeal to such ancient doctrine I need but remind you that philosophers in all subsequent ages have found the chief fountain of their inspiration in the writings of men who were the near contemporaries of Hippocrates, and that just as the Socratic Dialogues of Plato have remained an essential introduction for the student of philosophy and the Bible an essential introduction for the student of Christian morals, so might the Hippocratic Collection, or at least selected readings therefrom, serve as an introduction for the student of the medical arts and sciences It is a pity that the practical demands of medical education and the incessant developments and discoveries of the clinical and ancillary sciences should, by degrees but so largely, have excluded the desire for contact with early authority It is our loss too that no individual to-day is so equipped intellectually as to be able again to stand aside and take the general view of medicine in its entirety, to correlate its problems, to balance its science with its art to perceive and assess the components which make up the intricate "whole" presented to us in the shape of a "disease" or a "sick man" We have become, inevitably, too knowledgeable and too specialised In the endeavour to think sufficiently anatomically or physiologically, sufficiently in terms of infection and the *immunity-response*, to assess the constitutional the environmental and the psychological factors in the individual case—or in other words to bring *together our too* disjointed knowledge for the solution of the individual puzzle, we commonly fail or achieve but a partial success and in our treatment we often interfere too much Sometimes, I believe, *Hippocrates*, with all his limitations would have succeeded where we fail through his simple habit of observing and noting the facts of nature, through having seen the same things before, through his *recognition* of disease as a natural process rather than an "abnormality

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* An address delivered to the Abernethian Society at St Bartholomew's Hospital on Nov 15th 1934

(which after all is but a small advance on the old idea of demonic possession), and through his clear recognition of the *vis medicatrix naturæ* But I move ahead of my theme.

LIFE AND WORK OF HIPPOCRATES

Of the details of the life of Hippocrates little is known, but we have evidence that he flourished in the fifth century B.C, that his period of greatest activity was in the latter half of that century, and that he lived to a great age.

His contemporaries included the statesman Pericles; the poets Æschylus, Sophocles, and Euripides; Socrates and Plato, the philosophers; Herodotus and Thucydides, the historians; and Phidias, the sculptor. He came of physicianly stock and probably received a part of his early training in the temples of Health from his own father The school which he founded was in the little island of Cos in the Ægean Sea In the market-place of the chief town of Cos there still stands a very aged plane tree which is reputed to have flourished in his day, and in the shade of which he is believed to have taught Expert opinion has pronounced it possible for the tree to have endured such longevity. In his later years Hippocrates travelled much His advice was in great demand, and he won in his lifetime a degree of respect and veneration foreshadowing and in full keeping with his later fame.

The Hippocratic Collection consists of a number of writings on medical and allied topics, some of which are ascribed directly to Hippocrates himself, some which may yet be regarded as genuine products of his school to his disciples, and others which are now accounted as spurious and of later date Among the more noteworthy of these writings are the following: Epidemics I and III; Airs, Waters, Places; The Aphorisms; Prognostic; Regimen in Health; Regimen in Acute Disease, The Oath; Wounds of the Head, Fractures; Joints; The Sacred Disease.

Of his work and practice we may assume that he probably saw and advised his patients and taught at a temple of Health or its equivalent, much as a modern physician might hold his clinic. Probably his case records and those of his assistants were accumulated in the library of the institution Of the case-report system he may be regarded as the founder. We have no doubt from his vivid descriptions of fever cases in The Epidemics that he also visited patients in their homes Occasionally his opinion was sought by public authorities in great emergencies, as when Athens was afflicted with plague.

The Scientific Ideal

What was the great contribution of Hippocrates *to the science of medicine?* The advancement of the biological sciences, of which human pathology is surely not the least, has depended upon the combined contributions of observation and experiment. The method of experiment was a late arrival and, although there were experimenters before his time, Harvey may be regarded as its first outstanding exponent Hippocrates was literally the founder of the observational method, and in this we may claim for him an even greater regard than that implicit in his familiar title, the Father of Medicine We have to imagine that before his day medicine was compounded in large part of first aid, quackery, and superstition, and that even physicians of repute relied far more upon tradition and speculation than upon recorded fact. Hippocrates set himself steadfastly against speculative philosophies and quack therapy, and applied himself to the task of accumulating knowledge of disease and of man in disease by accurately recording what his own senses revealed to him. The method was extended to the whole realm of natural history by Aristotle, but it is a matter for pride that a physician (and the physician's work bears close similarities with that of the natural historian) was its founder *Prof. J. S Haldane, in his Gifford lectures* on "The Sciences and Philosophy" (1927–1928), writes as follows:—

> "Hippocrates treated the unconscious activities of life as natural processes. He claimed the right to interpret them in accordance with actual observation, regardless of superstition and of the intrusion of philosophical opinions not based on observation of them In observing Nature just as she appears in the phenomena of life, and basing his opinions directly on the observations, he founded scientific medicine, and with it, as it seems to me, scientific biology. The co-ordinated activity manifested in the phenomena of life was regarded by Hippocrates as nothing more than a visible and tangible manifestation of Nature. . His influence, through Aristotle and later Greek thinkers and observers, appears to have been a very great one... It seems to me that the attitude of Hippocrates was, and is, the only attitude possible in scientific biology."

And yet how constantly has specialisation, in *medicine and biology, led to a neglect of the* "coordinating activity" in nature How constantly to-day are we "side-tracked" into a contemplation of isolated functions and "parts" and a neglect of "wholes." Instead of man we study the parts of man, instead of disease aspects of disease

Only a reading of the works themselves can convey a full idea of the remarkable powers of observation possessed by Hippocrates All his senses, seeing, hearing, feeling, smelling, tasting must have been assiduously employed and his deliberations based on his sense data were illuminated by the clear light of his reason. He has left us living thumb-nail sketches of many diseases, including mumps, the malarias, erysipelas (mentioning how the hair falls after erysipelas of the scalp), empyema, puerperal fever. He described a number of valuable signs both of a general and a local kind. The Hippocratic facies of impending death "with sharp nose and hollow eyes"; Hippocratic succussion in pyo-pneumothorax; "curved nails" or, as we should call it, "clubbed fingers" in empyema, splenic enlargement in malaria; Cheyne Stokes breathing, "respirations rare and large with long intervals," to use his own words; tetanus after wounds—are all depicted in his records With no means at his disposal for minute analysis he yet gave the most careful attention to the naked-eye characters of the excreta and of discharges.

In "Precepts" he advises that "one must . . . occupy oneself with facts persistently, if one is to acquire that ready and infallible habit which we call 'the art of medicine' For so to do will bestow a very great advantage upon sick folk and medical practitioners. Do not hesitate to inquire of laymen, if thereby there seems likely to result any improvement in treatment" The most scientifically trained among us are *still too easily tempted to toy* with hypotheses instead of occupying themselves with facts. The *practitioner remains unduly reluctant* to accept help or suggestions from the layman. In "Law" he states "there are in fact two things, science and opinion; the former begets knowledge, the *latter* ignorance" In medicine, swayed by the intricacy of our problems, we are still sadly prone to guesses and "opinions" which warp the truth-seeking spirit In "Ancient Medicine" and other works we find references to the constitutional factor, and in "Airs, Waters, Places" to the environmental factors in disease

PROGNOSIS

Hippocrates attached a very particular importance to prognosis

"I hold," he said, "that it is an excellent thing for the physician to practise forecasting For if he discover and declare unaided by the side of his patients the present, the past and the future, and fill in the gaps in the account given by the sick, he will be the more believed to understand the cases, so that men will confidently entrust themselves to him for treatment Furthermore, he will carry out the treatment best if he know beforehand from the present symptoms what will take place later"

Much unnecessary and unwise treatment, both medical and surgical, might be avoided even now if physicians and surgeons, less wedded to medicines, injections and techniques, and less susceptible to the impulse "to do something" in anxious situations, schooled themselves better in that knowledge of the natural course and eventualities of disease upon which all sound prognosis and treatment depend

Hippocrates knew the importance of many prognostic signs and often enough their limitations "If a part of the white appear when the lids are closed, *should the cause not be diarrhœa or purging or should the patient not be in the habit of so sleeping*, it is an unfavourable, in fact a very deadly symptom" Plucking at the bed-clothes in fevers and pneumonia he also recognised as of grave import, and also grinding the teeth in fevers *unless it has been a habit from childhood* I would ask you to note how these qualifications complete the accuracy of the observations. The advancement of diagnosis and prognosis has depended and will continue to depend more upon exact clinical observation than upon any other single factor

"In cases of ulcerated tonsils," he tells us, "the formation of a membrane like a spider's web is not a good sign," and "ulcers on the tonsils that spread over the uvula alter the voice of those who recover" He notices that injuries or incisions on one side of the brain produce spasms on the other side of the body His instructions for the careful examination of head wounds, with a note on the importance of discovering if the bone is bare and of distinguishing natural sutures from traumatic fissures, are as useful to-day as when they were written

APHORISMS

His "Aphorisms," many of them beautifully brief and to the point, are clearly the crystallised fruits of repeated observation and accumulated experience Here are a few of them —

"Old men endure fasting most easily, than men of middle-age, youths very badly, and worst of all children, especially those of a liveliness greater than ordinary"

"When sleep puts an end to delirium it is a good sign"

"Spontaneous weariness indicates disease"

"In every disease it is a good sign when the patient's intellect is sound and he enjoys his food The opposite is a bad sign"

"Those who are constitutionally very fat are more apt to die quickly than those who are thin" (The life insurance societies know this well)

"Pains and fevers occur when pus is forming rather than when it has been formed"

"A convulsion supervening upon a wound is deadly"

"Consumption occurs chiefly between the ages of eighteen and thirty five"

"If diarrhœa attacks a consumptive patient it is a fatal symptom"

"Apoplexy occurs chiefly between the ages of forty and sixty"

"In the case of a person afflicted with hiccough, sneezing coming on removes the hiccough"

"In acute diseases chill of the extremities is a bad sign"

'Whenever abscess of the liver is treated by cautery or the knife, if the pus flow pure and white, the patient recovers, for in such cases the pus is in a membrane, but if it flows like as it were lees of oil, the patient dies"

Was he contemplating surgery and the early substitutes for diathermy in malignant growth when he wrote "Those diseases that medicines do not cure are cured by the knife Those that the knife does not cure are cured by fire Those that fire does not cure must be considered incurable"?

The examiners may require us to know the calcium content of the blood and the technique of the Wassermann reaction The aphorisms are more useful in practice

In describing his bedside method and the things particularly to be observed there Hippocrates wrote as follows —

"With regard to diseases, the circumstances from which we form a judgement of them are—by attending to the general nature of all, and the peculiar nature of each individual—to the disease, the patient and the applications—to the person who applies them, as that makes a difference for better or worse—to the whole constitution of the season, and particularly to the state of the heavens and the nature of each country, to the patient's habits, regimen and pursuits, to his conversation, manners, taciturnity, thoughts, sleep, or absence of sleep, and sometimes his dreams, what and when they occur, to his picking and scratching, to his tears; to the alvine discharges, urine, sputa and vomitings, and to the changes of diseases from one to another, to the deposits whether of a deadly or critical character, to the sweat, coldness, rigor, cough, sneezing, hiccough, respiration, eructation, flatulence, whether passed silently or with a noise, to hæmorrhage and hæmorrhoids; from these and their consequences we must form our judgement"

Could we desire a more concise exhortation to attentive history-taking and clinical observation?

His philosophy with regard to disease and its origins is portrayed in the beautiful fragment entitled "The Sacred Disease," the name given to epilepsy, a disorder considered for centuries after Hippocrates to be an evidence of demonic possession —

"I am about," he says, "to discuss the disease called 'sacred' It is not, in my opinion any more divine or more sacred than other diseases, but has a natural cause, and its supposed divine origin is due to men's inexperience and to their wonder at its peculiar character" And again "It has the same nature as other diseases, and the cause that gives rise to individual diseases It is also curable, no less than other illnesses, unless by long lapse of time it be so ingrained as to be more powerful than the remedies that are applied Its origin, like that of other diseases, lies in heredity"

In the same work he discusses the brain as the seat of consciousness and the emotions, a conception quite unfamiliar at that period when the heart and the diaphragm were commonly held to be the seat of the soul

OBSERVATION AND RECORD

The importance of accurately observing and *recording facts*, *of studying the whole event* and all attendant circumstances, of viewing the phenomena of disease as natural phenomena and not as due to malign agencies or, as we should say "abnormalities", these, in brief are the main lessons of the Hippocratic creed To-day, as then the physician if he would be a good healer must first be a *good* natural historian The scientific ideal in medicine does not of necessity demand intensive abstract study of minutiæ, prolonged specialistic inquiry, or training or discovery by experiment alone Rather does it require insistence on truth, correction of error, an understanding of the methods whereby truth is ascertained, an ability to sift evidence, and an appreciation of "wholes" and of those coördinating activities which determine the nature of things, and without some understanding of which our study of "parts" may become an enfeebling or confusing rather than an enlightening process Properly used and weighed bedside experience can point the way to the goal of biological truth as surely as the departmental experience of the laboratory

To what extent does modern medical education help us to apply the Hippocratic method or subserve the Hippocratic ideal? In the clinical period the opportunity is there for all, even if the material of wards and out-patients be too limited, lacking much that the life of practice provides We have also the guidance of our teachers and the stimulus of contact with other minds pursuing the same ends, but we must confess that the constant increments to knowledge and the steady arrival of new diagnostic tests and implements encumber us with difficulties and in some degree hamper both the use of the unaided senses and the growth of judgment. Invaluable though our accessory methods of inquiry have become we also know that in practice many of the best diagnoses and nearly all the best decisions in emergencies are accomplished without radiological or laboratory aids. In the pre-clinical period, although a thorough grounding in chemistry, physiology, and anatomy is an obvious necessity, it seems to me that the curriculum provides little scope for the cultivation of "the habit of observation." In the dissecting-room we train our hands and the anatomical sense, rediscovering what has often been described, but we also exhaust our memories with names of parts, and we do not learn to see new and vital things for ourselves. In physiology, the most valuable of the ancillary subjects, we find our introduction to the experimental method and usefully train the mind to think in terms of function, but we tend to lose the application of such knowledge and have to accept a number of doctrines liable themselves to flux and change, and altogether have so much to absorb that we commonly cease to inquire. Much of this basic knowledge in anatomy and physiology is essential; much of the detail otherwise. We use the microscope and the test-tube, and we must know how to use them, but little is done to exercise the unaided senses, the inquisitive "look-about-you" faculty, the sympathetic appreciation of vital phenomena as shown in human feelings and actions, or to train the mind to detect the moods and passions and psychological peculiarities of other minds Indeed for the first three years of the medical curriculum the observing faculty, which is so sharp in the unencumbered child, so necessary in the naturalist and the physician, and which was developed in so remarkable a degree by Hippocrates, is not only not encouraged but to some extent inhibited by educational modes which seek to harbour the scientific spirit with a type of training suitable for the student of physics or chemistry, but inappropriate for the student of man in health and disease. On entering the wards we have to develop a new orientation and a new method, and in the process most of what we have garnered in the pre-clinical period, and even much of what was useful therein, rapidly goes by the board

One of my own teachers, a great surgeon, clinician, and pathologist, the late Sir Charters Symonds, urged in a Hunterian Oration 13 years ago that clinical opportunities should be given from the very first. "The student of medicine," he said, "throughout his life must be sensible of the atmosphere which surrounds the sick-bed." And again · "The only opportunity the student of medicine has for independent observation . . . is in the clinical field, and the sooner he is brought there the better." Many of us share these sentiments. The ward, the out-patient clinic, the consulting-room and the home are the only places in which we can learn the Hippocratic method at first-hand.

The Therapeutic Ideal

Among the critics of Hippocrates, and even this great man has had a few detractors, there have been those who objected that he was so intent upon observing disease that he neglected his patients Through his influence, they would aver, other physicians in other ages have been guilty of scientific callousness. In hospital work the temptation to be interested in man's pathology rather than in man himself is one which some find difficult to resist, but that is to be traced rather to a narrow curiosity than to callousness, and it must be rare indeed for it to lead to neglect I have found nothing in my own reading of the Hippocratic collection to justify the criticism as directed against its author. Recognising disease processes in the body as a contest between the body tissues and other natural agencies, and aware of the spontaneous tendency to recovery in the great majority of diseases and the great majority of patients, he concluded that recovery from disease, just like disease itself or death from disease, was a natural phenomenon "Nature," he or one of his followers said, "is the physician of diseases" Sydenham expressed himself more strongly when he declared that "To imagine Nature incapable to cure diseases is blasphemy; because that would be imputing imperfection to the Deity, who has made a great provision for the preservation of animal life". With our more intimate understanding of pathology we continue to support this doctrine We continually relieve suffering by surgery, psychotherapy, and the judicious employment of diet and drugs, but, if we except the knife in certain types of injury and local disease, a few specific chemicals in protozoal diseases. the substitution therapies, and one or two life-saving antitoxic sera, with all of which we lend a dramatic assistance to nature, we must confess that we are to this day powerless in the strict sense to cure disease.

We have ample evidence that Hippocrates did not withhold, any more than we do, the assistance which physician and nurse may give to patients to enable them the better and the more speedily and comfortably to combat their maladies

In surgery he insisted on cleanliness, using wine for washing wounds and urging that dryness should be secured in lacerated wounds, he instructed the surgeon to keep his nails short, he trephined for certain head injuries, he taught methods of reducing dislocations which we still employ, he recognised the therapeutic value of rest, and of hot and cold applications, and of baths, and the inadvisability of prescribing alcohol in head injuries He was an advocate of barley water in fevers and used hydromel and oxymel, giving indications for each He was a good psychologist, as indeed every successful physician must be He speaks of the necessity of performing actions in the sick-room "calmly and adroitly," of giving orders "with cheerfulness and serenity"; but sometimes of "reproving sharply and emphatically" He advises keeping "a watch on the faults of the patients, which often make them lie about the taking of things pre cribed" "One must not," he says, "be anxious about fixing a fee For I consider such a worry to be harmful to a troubled patient, particularly if the disease be acute For, in heaven's name, who that is a brotherly physician practises with such hardness of heart as not at the beginning to conduct a preliminary examination of every illness and prescribe what will help towards a cure, to heal the patient and not to overlook the reward, to say nothing of the leisure that makes a man ready to learn?"

"Loud talking," we are reminded, "is painful Overwork calls for gentle dissuasion A wooded district benefits"

He is alive to the disagreements existing among physicians in the matter of therapeutic beliefs and of the discredit which this brings them in the minds of the laity He makes astute observations such as the following "For if disease and treatment start together, the disease will not win the race" I am reminded by this in our modern medicine of the remarkable effects of antitoxin administered early, before the spread of toxins, in diphtheria and infected wounds as compared with the much more dubious influence of antistreptococcal and antipneumococcal sera, which can seldom be given before the disease is established and declared "Do not," he says, "disturb a patient either during or just after a crisis, and try no experiments, neither with purges nor with other irritants, but leave them alone" Regimen in health and disease receive full consideration but, realising the variability of the constitution of man and his circumstances, he admits that "it is impossible to treat of the regimen of man with such a nicety as to make the exercises exactly proportionate to the amount of food" He believes in giving responsibilities to dressers and clerks, and to the patient

"Let one of your pupils be left in charge, to carry out instructions without unpleasantness, and to administer the treatment" "The art has three factors the disease, the patient and the physician The physician is the servant of the art The patient must co-operate with the physician in combating the disease"

But perhaps the greatest therapeutic principle of all those which the Coan school has left to us is this: "As to diseases, make a habit of two things—to help, or at least to do no harm" As experience accumulates many of us must reluctantly confess that we see a vast deal of harm in practice due to injudicious interference The policy of "letting well alone" in an improving case, even though improvement be slight is a sound one but often ignored The urge "to do something" in the acute or anxious case even though it be not clear what that "something" should be, often prevails, when it would have been far wiser to wait and watch Against the countless triumphs of surgery we have to set a long list of harmful interferences, especially in the abdominal field The more potent a treatment is for good the more potent also is it for ill when misapplied It is important to avoid timidity in our actions or a permanent policy of *laissez faire*, but in being bold we should never become oblivious to the wise restraint of that injunction to "do no harm"

The Ethical Ideal

If there be present need for a revision in the light of early teaching of our ideas relating to the science and art of medicine the occasion is perhaps, still more ripe for a revision of ethical ideas The war, as though in some small compensation for vast evil, brought benefits to medical and surgical knowledge, but its interruptions have in some degree been damaging to the old ethical standards of the profession The former friendly relationship between doctor and doctor and patient and doctor, although they are still among the happier rewards of practice, have been subjected to various strains and, if there has been more freedom of thought and action, this has sometimes been counterbalanced by a loss of mutual trust and understanding

I hear occasional complaints from older men that appropriation of patients by newcomers, criticisms of colleagues to patients and by patients, and uncorrected inconstancy among patients manifest in their flittings after specialist and unorthodox opinion, are much more common than in the old days Cloaked advertisement, "stunt" treatments, and commercial methods have crept in insidiously in some quarters Jealousies are rife These evils are not new, but if there be any truth in the impression that they are increasing it is time that a profession which has hitherto maintained its standards at a very high level should immediately seek to set its house in order

The rules were all laid down between two and three thousand years ago in the Oath, the Precepts, the Decorum, Physician and Law of the Hippocratic Collection

In the Oath the physician swears among other things that "Whatsoever I shall see or hear in the course of my profession, as well as outside my profession in my intercourse with men, if it be what should not be published abroad, I will never divulge, holding such things to be holy *secrets*" We cannot too often remind ourselves of the importance of professional secrecy or too closely guard our tongues from gossip.

Of the physician it is written that "The prudent man must also be careful of certain moral considerations—not only to be silent but also of a great regularity of life, since thereby his reputation will be greatly enhanced, he must be a gentleman in character, and being thus he must be grave and kind to all"

"*Physicians* who meet in consultation must never quarrel, or jeer at one another For I will assert upon oath, a physician's reasoning should never be jealous of another To be so will be a sign of weakness" "You must also avoid adopting, in order to gain a patient, luxurious headgear and elaborate perfume For excess of strangeness will win you ill repute Yet I do not forbid you trying to please, for it is not unworthy of a *physician's dignity*" "A physician does not violate etiquette even if, being in difficulties on occasion over a patient and in the dark through inexperience, he should urge the calling in of others, in order to learn by consultation the truth about the case"

Consideration for the patient's pocket could scarcely be more nicely prescribed than in the following words: "I urge you not to be too unkind, but to consider carefully your patient's super-abundance or means Sometimes give *your services for nothing* calling to mind a previous benefaction or present satisfaction And if there be an opportunity of *serving one who is a stranger* in financial straits, give full assistance to all such. For where there is love of man, there is also love of the art."

Here then we have, in these *few* quotations, sane and kindly recommendations for the physician's life requiring of him a high morality, devotion to professional secrecy avoidance of jealousy, willingness to confer with colleagues avoidance of undue "show," and kindness to patients in the matter of fees We need no other code

DISCIPLES OF THE HIPPOCRATIC METHOD

It might seem invidious to select *from* the pages of medical history men who have exemplified the Hippocratic type above their fellows. In every era, although there were dark gaps in the Middle Ages, and in every civilised country there have been physicians, eminent or obscure, who have faithfully pursued the old ideal Sydenham well earned his title of "the English Hippocrates" in his professional life and in his endeavour to give a true description of the natural history of diseases William Heberden, who gave the first account of angina pectoris in all its clinical details, and insisted on careful note-taking, was of similar breed. Trousseau and Osler, great teachers and practitioners, were of the same *genus* But countless others among physicians and surgeons and among general practitioners of the lovable, cultured type of Dr. John Brown—the author of "Rab, and his Friends"—have fulfilled the Hippocratic behest. Among our own colleagues and teachers and family doctors we could name not a few besides If we look beyond the anecdotes which grew up around John Abernethy and have given him a reputation for uncouthness we must agree to include him in the same school Another great surgeon, Syme of Edinburgh, accounted Abernethy the finest surgical mind after John Hunter and Percival Pott, but he was a physician too, a physiologist, and even a psychologist, for he wrote a well-reasoned little essay on the Mind. He saw things whole and based his views and treatment on sound observation and common sense. His generosity to poor patients is proverbial and can seldom have been surpassed.

The Future of Medicine

How shall we weld the methods of Hippocrates and Harvey to obtain the fullest benefits of both? How are we to combine the old with the new? Experimental medicine, full of gifts, firing the imagination and claiming the industry of the younger generations, but moving ahead with too little coördination and control; the old steady observational medicine, no less scientific in careful hands, but often betrayed by lack of accuracy and care; and the art of practice based upon an admixture of these sciences with human kindliness and vision and courage and much restraint—how, in our individual and professional lifetime, are we to accomplish a wiser use and application of these three? How again are we to modify our curriculum and examination system in such a way as to lighten the burden of the student and yet give him firmer foundations and a broader view?

For myself I should like to appeal for better opportunities for observational training and the use of the senses in field natural history during the school period, and better opportunities for continuing the education of the senses by parallel clinical study of the healthy and the sick during the pre-clinical phases of medical education. Eyes, hands, ears, and nose, and the technique of history-taking, require constant utilisation and free scope To quote Dr. John Brown: "In a word, let me say to my young medical friends, give more attention to steady common observation—the old Hippocratic ἀκρίβεια, exactness, literal accuracy, precision, niceness of sense; what Sydenham calls the natural history of disease. Symptoms are universally available; they are the voice of nature . . ."

Human psychology, in its daily practical bearings (and more than half of medicine is psychology), must take its place beside a more practical and less elaborate human anatomy, physiology, and pathology. Specialism in education (and most pre-clinical and extra-clinical teachers have, of necessity, the specialist outlook) carries with it the same disadvantages as too early specialism in practice. It discourages the free use of the senses and reasoned correlation of facts and delays the growth of judgment, which is the clinician's crowning need If we are to breed more and better specialists it is also, to my thinking, essential that we should preserve a just balance by breeding more and better workers in the field of general medicine.

In the domain of practice, whether we come eventually to a State service or move forward in our present paths, we must seek to temper our new science and indispensable discoveries with what our fathers possessed in better measure than we do—the old Hippocratic principles of art and conduct In every branch we need something of the philosophy of the man who, with all his vast learning and achievement, was humble enough to realise, as his most famous aphorism reminds us, that "Life is short, the Art long, opportunity fleeting, experience treacherous, and judgment difficult." With the aid of such wise humility and his strong exhortations to patient research and a love both of truth and man, we shall one day combine the new with the old, resolving present difficulties, and raise the standards of the Science and Art of Medicine to a level at present beyond our vision.

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SOME AIDS TO TIDY OPERATING

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To the surgeon operating always with the same trained assistants, who remain with him for considerable periods, tidy operating presents no difficulties To those less fortunately placed its achievement is an ever-present problem The devices whereby I am attempting to solve this problem for myself have undergone sufficient trial to have passed the experimental stage That I have found them useful, and that several colleagues have adopted them in their own work, is my excuse for publishing them

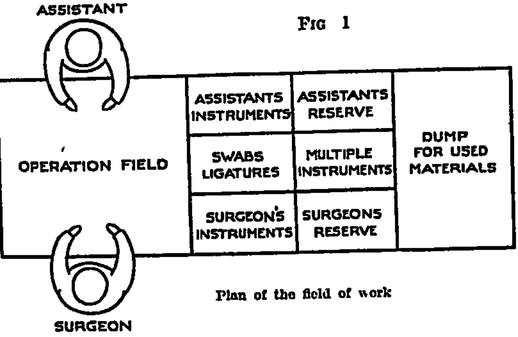
During any surgical operation many kinds of instruments and materials are brought into use, some constantly, some intermittently, some only occasionally The surgeon and his assistant, possessed of only two hands apiece, must each put down one instrument as they take up another, and, if the operation is a prolonged one of some difficulty, especially if its urgency calls for rapid work, these tools are apt to be laid close to the operation area, often on top of some which have been used earlier The field of work under such circumstances only too easily becomes a confused mass of instruments, used and unused, clean and dirty, in which that required at the moment cannot be readily identified The appearance of such a table is distressing to the surgical sense, and its effect upon efficiency disastrous

It appeared to me that the solution of the difficulty lay in the subdivision of the sterile part of the operation table, that is from the anæsthetist's screen to the foot, into three zones:—

(1) The operation field, in which only those instruments and materials in actual use should be allowed to remain

(2) The instrument zone, in which all instruments required for the operation should be kept Each instrument should have its appointed place in the zone, where it

FIG 1



Plan of the field of work

FIG 3A

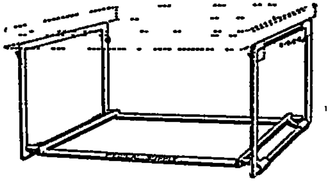
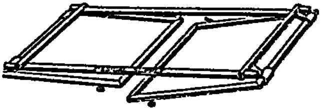


FIG 3B

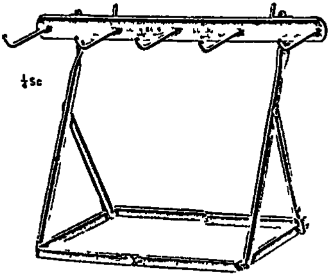


Folding tray stand

could readily be found, and to which it should be returned when no longer required

(3) The dump—in which should be deposited things no longer required, or those needing cleansing before further use

FIG. 2A



Folding instrument rack.

The instruments and materials used in an operation l into several distinct categories —

(1) *Multiple Instruments* artery forceps Mayo ssors; Lane's tissue forceps, towel forceps

(2) *Surgeon's Instruments* knife toothed dissecting rceps, plain dissecting forceps, Mayo scissors

(3) *Assistant's Instruments* toothed dissecting forceps, ain dissecting forceps; stitch scissors

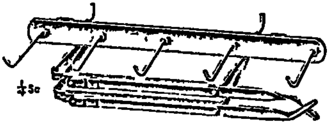
(4) *Instruments used occasionally during any operation* retractors

(5) *Special Instruments for certain Operations* examples—intestinal clamps, Moynihan's gall bladder forceps

(6) Swabs (7) Ligatures (8) Suture materials

The instruments included in each category are my own selection, but the general grouping holds good

FIG 2B



for any surgeon The articles in the second, fifth, and eighth groups are used by the surgeon, those in the third and fourth groups by the assistant, and those in the first, sixth, and seventh group by surgeon and assistant alike The necessary subdivision in the field of work thus becomes clearer, and must be something like that in the plan shown in Fig 1

When we come to work this plan out in greater detail, the most obvious difficulty to be solved is the disposal of the multiple instruments in Group 1 These are numerous, and the space available for them in the instrument zone is limited This problem has been solved by an instrument rack, on which each

FIG 4A

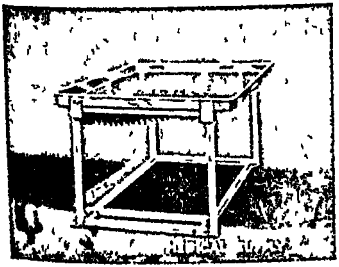
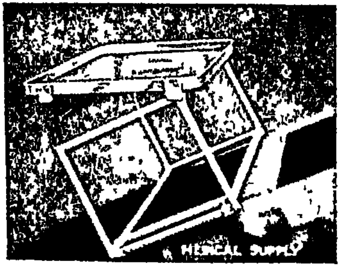


FIG 4B



Instrument tray on stand

batch of instruments is held on its own peg. By this device five or six dozen instruments, if so many are required, are kept readily accessible to surgeon or assistant on an area measuring only 10 in by 7½ in

The second difficulty is the provision of a suitable platform for the instrument zone, available on any table, and clearly demarcated from the rest of the sterile field. This demands a tray, but the ordinary theatre tray which stands on the floor cannot be transported, needs constant adjustment, and is unstable, while those trays made to clamp on to the table will fit one table alone, and only certain positions on that table I first worked with an ordinary tea tray to which two supports of aluminium sheeting, concave and serrated on the under surface, had been riveted This tray rests securely over the patient's thighs and is admirable for ordinary work; when, however, local anæsthesia is used for any prolonged operation, its weight becomes irksome to the patient. I now use a light folding stand which can be put on any table at any level, and which carries the tray securely at a convenient height.

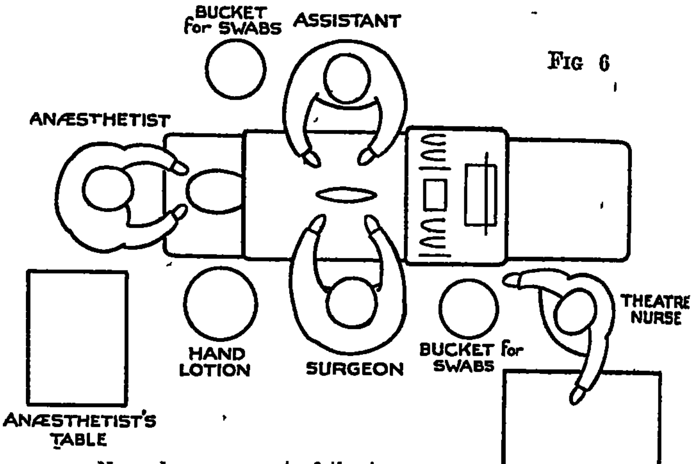


FIG 6

Normal arrangement of theatre

DETAIL OF THE THREE INSTRUMENTS

The *instrument rack* (Fig. 2)—This consists of two parts, a stand and a horizontal bar The stand, made of thin strip steel, has a quadrilateral base 10 in by 7½ in, bearing two trestles on its short sides The trestles and base are hinged, so that the whole folds into small compass, and will go into any steriliser. The horizontal bar is a flat sheet with two slots to slip over the trestles, carrying in front five horizontal pegs tilted slightly upwards at their ends, and behind two short pegs tilted outwards The front pegs are used to hang the multiple instruments; round the back pegs a piece of gauze is tied, and the needles bearing the sutures to be used are inserted in this, those required first being next the surgeon The rack when erected is rigid, and perfectly stable even when carrying its maximum load of eight dozen instruments

The *tray stand* (Fig 3) is made of steel tubing, in three sections, hinged together. The middle section is flattened and is put across the table at the required level under the rubber mattress, the side sections then drop out of the way. In use the side pieces are lifted up to the vertical, where they come against stops on the middle section The tray is then slipped over the side pieces, locking them in position, and held by them at a height of 10 in above the table For transport the two side pieces fold flat on the middle section.

The *tray* (Fig. 4) is of sheet aluminium, 22 in. by 16 in, and has an

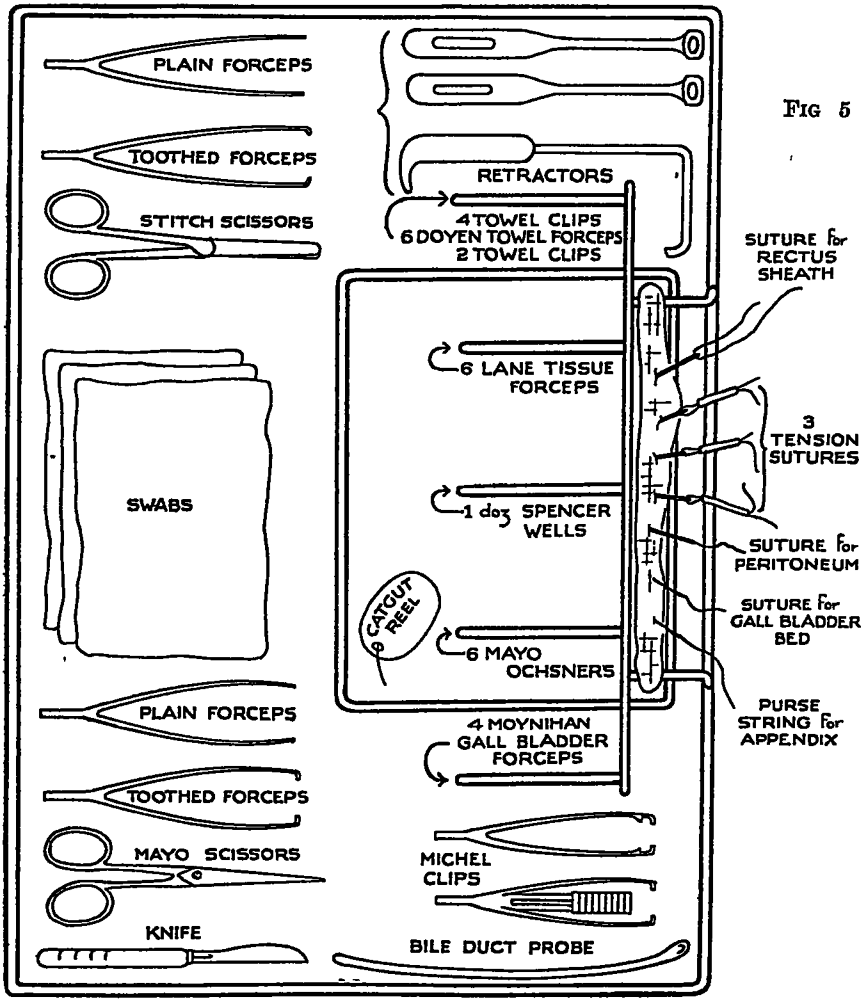


FIG 5

Tray and rack arranged for a gall-bladder operation.

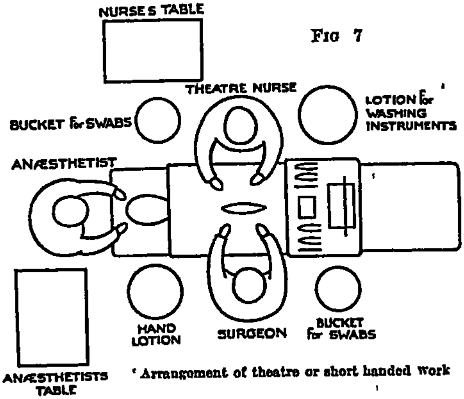
ige 1 in high On the under surface of the ur corners are riveted angle pieces, which fit er the side members of the tray stand, making firm joint For ordinary surgical work such tray is sufficient If it is to be used in the rendelenburg osition, the tray rries in addition a atchet on its under urface, and the side nembers of the tray tand have pegs at he head end on which he ratchet engages, nd strips at the foot nd, which hold the ngle pieces of the ray as it tilts When not in use the ratchet folds up under the tray

THE INSTRUMENTS IN USE

While the patient is being anæsthetised, the instrument nurse loads all the multiple instruments on the rack, and puts the threaded needles in position behind it When the patient is ready, the side pieces of the stand are tilted up and the tray slipped over them. The skin is painted, and sterile mackintoshes and towels are put in position over the patient and the tray The rack with its instruments is then placed in the centre of the tray against its back edge Along the front half of the tray are three groups of equipment—surgeon's instruments on the patient's right, assistant's instruments on the left, swabs in the middle The ligature reel is placed in the square formed by the base of the rack, if the assistant is a skilled knot tier, two reels are used Retractors lie in the back left corner (assistant's corner), special instruments in the back right corner (surgeon's corner) The table is now divided into the three required zones, all sterile first the operation area, second the tidy instrument area, third the dump—beyond the tray Here used instruments are put down, taken up by the nurse, washed, and returned to their proper place

To make matters abundantly clear I append three diagrams, one of my own arrangement of stand and tray for a gall bladder operation, one of the arrangement of the theatre for an ordinary operation, the third for short handed work in a nursing home (Figs 5, 6, 7) The instrument rack was designed and made four years ago to my suggestions by my chauffeur, Andrew Jamieson, and has remained unaltered; the first tray was also made by him The tray and stand are my design, but the additions for the Trendelenburg position are the work of my late dresser, Mr G Humby These instruments are made by Down Bros, of St Thomas's street, S E 1; the Medical Supply Association, of Gray's Inn road, W C 1, and Willen Bros, of 94, Charlotte-street, W 1.

FIG 7



Arrangement of theatre or short handed work

ÆTIOLOGY AND MORTALITY-RATE OF HÆMATEMESIS

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A RECENT discussion at the Royal Society of ledicine[1] has again focused attention on the problem f hæmatemesis, and it is therefore of interest to put n record the findings in 303 cases presenting the ardinal symptom of hæmatemesis of such severity s to require hospital treatment, admitted to the General Infirmary at Leeds in the years 1926-32 inclusive

The causes of the hæmatemesis were as follows —

Proved ulcers	96	Cirrhosis	10
Probable ulcers	106	Carcinoma ventriculi	5
lenic anæmia	14	Doubtful	72

The group labelled "doubtful" includes those who for various reasons left the hospital before investigations were completed, but the majority were cases with a vague history, many of them being negative on X ray examination and some where there were also negative findings at laparotomy Probably many of these were cases of "acute erosions" but it was thought wise to separate them and not include them as definitely "acute ulcers" hæmatemesis. Only 30 deaths (14·8 per cent.) therefore were due primarily to the hæmatemesis. A post-mortem examination was performed on all these cases and the type of ulcer described, an interesting point being that in a number of cases an apparently acute ulcer (as defined by Stewart[3]) was found to be associated with scarring of the stomach—i e , with evidence of previous ulceration—thus showing a liability on the part of the patient to ulceration.

TABLE I

—	Duodenal ulcer.		Gastric ulcer		Jejunal ulcer.		Unclassified peptic ulcer.	
	M.	F	M	F.	M.	F.	M.	F.
Proved ulcers, 96.	33	2	31	22	7	1	—	—
Probable ulcers, 106	16	1	40	26	8	1	11	3
Ulcers, 202	49	3	71	48	15	2	11	3

M.=male ; F =female.

The details of the fatal cases were as given in Table II.

TABLE II

—		M.	F.
Gastric ulcers	Acute	2	2
	Acute with scarring	5	4
	Chronic ..	7	2
Duodenal ulcers, chronic		6	—
Jejunal ulcers, chronic		1	1

Of the acute ulcer cases one man had a history of 18 months' ill-health following a tooth extraction and for a month had had a poor appetite but no actual pain, and the other had suffered from gross heart failure for some months, a severe hæmatemesis being the final cause of death. Of the two women, one had had vague indigestion for a year and the other died half an hour after admission and no history was obtained

In all except one of the cases of acute ulcers with scars there were histories suggesting ulceration for considerable periods, so that it is probably fair to class these with the chronic ulcer group which, either by history or radiography, could have been diagnosed ante-mortem, whilst the acute ulcers without scarring, together with two cases of doubtful origin upon whom no post-mortem was performed, correspond to the group of uncertain cases. Thus the mortality-rate for diagnosable ulcers would correctly be as given in Table III.

TABLE III

—		Cases	Deaths	Per cent.
Gastric ulcers	Males	71	12	15 5
	Females ..	48	6	12 5
Duodenal ulcers	Males	49	6	12 3
	Females	3	—	—
Jejunal ulcers	Males ..	15	1	6 6
	Females	2	1	—

In addition there were 6 deaths (4 acute ulcers and 2 doubtful) among 72 cases (8 3 per cent), the origin of whose bleeding could not be determined during life.

Analysing the fatal cases according to age (Table IV.):—

TABLE IV

Age .		21–30	31–40	41–50	51–60	61–70
Gastric ulcer	Male .	2	5	2	3	2
	Female .	—	—	3	4	1
Duodenal ulcer	Male ..	2	1	1	2	—
Jejunal ulcer	Male .	—	—	—	1	—
	Female.	—	—	1	—	—

Comparing the total incidence with the total fatality for ulcers of all kinds (Table V.):—

TABLE V

Age ..		11–20	21–30	31–40	41–50	51–60	61–70
Incidence fatality	Male	4 —	25 6	38 4	38 3	29 6	12 2
	Female ..	2 —	6 —	7 —	23 4	15 4	3 1

Total mortality from all ulcers which could have been diagnosed ante-mortem :—

Males ..	19 in	146 cases ..	13 0 per cent.
Females ..	7 ,,	56 ,, ..	12·5 ,,

The anatomical position of gastric ulcers as revealed at autopsy was always on the lesser curvature or on the posterior surface close to it, except in two cases, both of which were acute ulcers; the distribution of the ulcers on the lesser curvature was anywhere from 1½ in from the cardia to a similar distance from the pylorus The duodenal ulcers were all posteriorly situated.

In only two instances did death follow a solitary hæmatemesis and both were in duodenal ulcers In one the cause of death was really a broncho pneumonia and death occurred eleven days after a very large single hæmatemesis, while in the other thrombosis of a coronary artery was found post mortem, possibly secondary to the fall in blood pressure caused by the hæmorrhage.

CASES OF DOUBTFUL ORIGIN

The next group comprises 72 cases (23 7 per cent) in which there was not sufficient evidence to warrant a diagnosis This type of case has been fully discussed lately by M E Shaw,[4] who found 39 per cent. (in 28 cases) to which he could attribute no definite diagnosis. His criteria were somewhat stricter than mine, inasmuch as I have included as probable ulcers some cases in which there has been a definite history but in which radiological evidence at a later date proved negative I shall therefore not discuss this interesting problem but merely give the details.

There were 43 males and 29 females. In 39 there was a history of less than one month and in 21 no history at all of any indigestion. In 6 cases hæmatemesis had occurred previously and 2 of these never had any history of indigestion, whilst in 2 others there was less than a fortnight's history Three of these cases were radiographed with negative results, though in one case the test-meal showed a hyperchlorhydria In 2 cases operations were performed for the hæmatemesis and no ulcer was found; in 2 others laparotomies had been performed on previous occasions for hæmatemesis with negative findings, and one of these had had her abdomen opened a second time In 37 cases radiograms appeared ormal, except one where an ulcer was suspected, ut this was not confirmed at a later laparotomy ll these findings suggest that most of these hæmorhages have arisen from some superficial lesion of the omach which has been so acute as to fail to give any mptoms, or only to give them for a short time, nd which has healed rapidly and left no trace capable demonstration by X rays, we cannot, however, xclude the possibility of early cirrhosis and esophageal varices

Among these cases are two to which attention should e drawn —

(1) A man, aged 55, with no previous history of indigeson had a blow on the abdomen due to falling across a lank This was followed ten hours later by vomiting of wo pints of blood, which was repeated the following ay and again two days later After that he made an uninterrupted recovery and the radiogram of his stomach was negative, although the fractional test meal showed ome delay in emptying, with a high acid curve

(2) A man, aged 33, was having a course of N A B when purpuric rash appeared after the injection of 0 45 g The rash persisted for five weeks when he vomited a conderable quantity of blood, after this the rash rapidly disappeared At no time had he any indigestion

SPLENIC ANÆMIA

Under this heading are grouped 14 cases in which there was enlargement of the spleen associated with hæmatemesis and no history or other finding to suggest primary cirrhosis Of these cases 7 were men and 7 women, the age incidence is lower than with ulcer, 9 occurring under the age of 30 The youngest was a girl of 14, while the 5 cases (3 male, 2 female) which were fatal were also under 30 One of the non fatal cases had previously had a splenectomy performed and had ascites, and so in all probability there was a secondary cirrhosis, in one of the fatal cases a secondary cirrhosis had also caused ascites The hæmorrhage in this group tended to be severe and persistent, and in several cases transfusion was required, though it was not always successful in saving the patient's life

At autopsy there were obvious œsophageal varices in 4 cases, though the actual rupture was only observable in 2, in another the stomach was full of blood and the splenic and portal veins were found to be thrombosed, which may have precipitated the bleeding In another case hæmorrhage occurred from a small vein 1 in from the cardia underlying an acute gastric erosion, the spleen being markedly enlarged (30 oz)

CIRRHOSIS

These were all men (10), of ages varying from 36 72 There were two fatal cases in men of 56 and 7 In only one was a post mortem obtained, ophageal varices were present but no actual rupture as found ; there were, however numerous acute cers in the stomach mucosa which might have counted for the bleeding

CARCINOMA VENTRICULI

Frequent small hæmorrhages are common in cancer ut in 5 cases only did a severe hæmatemesis occur Three of these, died in hospital, one suddenly—pparently from heart failure—and one, a man of 32 llowing an operation undertaken for repeated hæmatemesis, on an original diagnosis of gastric lcer. No actual erosion of a vessel was found but there were numerous focal hæmorrhages in a large malignant lcer completely encircling the pylorus A similar ndition was found in the third fatal case a man 63 with only three weeks history before his vomiting a pint of blood, here again no actual eroded vessel was found The ages of the other cases were 52, 54, and 61 respectively

TREATMENT

The routine treatment in the hospital has been purely medical and has not departed from the usual lines of morphia, temporary starvation with ice to suck, and later Hurst's diet In some cases, particularly in those with repeated hæmatemesis, blood transfusion has been performed, but it is not possible to assess the utility of this form of treatment numerically as obviously only the most severe cases would have such treatment Surgical intervention was only undertaken for hæmorrhage on four occasions, in three of these, including a case of carcinoma in a man of 32, there were fatal results The indications for operation were as follows :—

(1) A man of 67 was admitted for indigestion of 9 years' duration and the radiogram showed a large gastric ulcer, there was also a high acid curve in the test-meal While waiting transference to a surgical ward he had a severe hæmatemesis, he was operated on two days later, partial gastrectomy being performed, but he subsequently died At autopsy the stomach was found to be full of blood which had apparently come from the gastro jejunal anastomosis

(2) A man of 20 was admitted for hæmatemesis and after a month's medical treatment was transferred to the surgical ward, where he had another severe hæmatemesis which was repeated on three occasions A blood transfusion was given and gastro-enterostomy was performed for a large duodenal ulcer The patient died 14 days later, and at the autopsy the sealed end of an artery was seen in the floor of the ulcer

(3) A man of 32 was admitted after vomiting half a pint of blood on two occasions He vomited five or six times while in hospital and did not appear to be responding to treatment, a transfusion was given and gastro-enterostomy was performed for a very large ulcer of the pylorus which was found at operation The patient died two days later and at autopsy careful examination showed this ulcer to be malignant

(4) This case recovered and was a boy of 17 He was admitted after vomiting a pint of blood, which was repeated once He did well for three weeks until he had a further hæmatemesis, probably associated with a dietary indiscretion He was at once given a blood transfusion, but five days later had a further hæmorrhage which necessitated another transfusion A third was given before an operation a few days later which showed the intestines full of blood and a large anterior duodenal ulcer, this was infolded and gastro-enterostomy performed He made an uninterrupted recovery

One cannot help thinking that operation was premature in the first two, which would probably have recovered completely from the hæmatemesis if they had been left alone, and a radical operation for a permanent cure of the ulcer could have been performed when the patient was in a more suitable condition The fourth case does seem to have benefited by the operation but we cannot say that he would not have recovered anyhow

No discussion will be given here but reference is made to that of M F Shaw[4]

CONCLUSIONS

(1) An analysis of 303 cases of severe hæmatemesis admitted to the Leeds General Infirmary is given, 202 were due to ulcer and 72 were of doubtful origin (2) The mortality in cases where a diagnosis of ulcer could justifiably be made ante-mortem was 13·0 per cent in men and 12 5 per cent in women (3) Attention is drawn to the frequency (14 cases) and severity of the bleeding in cases with enlarged spleens in the absence of any suggestion of primary cirrhosis Five of these cases proved fatal (4) Opera-

tion, where undertaken for hæmorrhage in cases of ulcer, has been associated with poor results.

I wish to thank the honorary physicians concerned for access to the notes of these cases.

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THE SYMPTOMATOLOGY OF INSULIN HYPOGLYCÆMIA

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A CONSIDERABLE proportion of diabetic patients being treated with insulin have, at some time, attacks of hypoglycæmia which are a source of alarm and worry to themselves and to their medical attendants. It is not unknown for practitioners to remark that they do not like putting their patients on insulin treatment on account of the difficulties, or even dangers, of its administration. While it must be admitted that hypoglycæmic symptoms are often unpleasant to the sufferer, they are seldom dangerous, and a clear understanding of the early symptomatology by patient and doctor gives at once a sense of confidence and a means of anticipating the more serious manifestations. The well-known diversity of symptoms found in hypoglycæmia makes it important that as many types of reaction as possible should be recorded to aid in the diagnosis of the condition, whether due to insulin administration or arising spontaneously. Attention will later be drawn to two new symptoms, hitherto unrecorded.

A short account is given here of the various symptoms exhibited by a number of diabetics who have suffered from hypoglycæmia in the course of treatment. The cases were all out-patients, and, for the most part, showed only the earlier symptoms. The data were collected from the diabetic clinic attached to the Medical Unit at St. Thomas's Hospital and are published by permission of the director, Prof. O. L V de Wesselow.

A questionnaire was submitted to 179 consecutive patients, of whom 111 (62 per cent) stated that they had had one or more attacks of hypoglycæmia. There was no appreciable difference in the incidence between the sexes; more attacks were noted among the younger patients The symptoms appeared after the insulin injections at intervals of from one to twelve hours, the most frequent time being four hours; 53 per cent of the reactions occurred at three and four hours and 74 per cent. at two to five hours The attacks were not confined to any one part of the day, 52 per cent. occurred in the morning only, 38 per cent. in the evening only, and 10 per cent. in the morning and evening The seasonal incidence showed more marked differences—summer 69 per cent, spring 18 per cent, winter 11 per cent., and autumn 2 per cent Over 30 per cent of the patients had noticed that exercise tended to bring on hypoglycæmic symptoms, and this fact doubtless accounts for the high proportion of cases occurring in the spring and summer

The accompanying Table shows the symptoms which were observed and their relative frequency; the figure after each symptom indicates the number of cases in which it was observed, all the patients having as a rule several symptoms

Symptoms associated with Hypoglycæmia

Sweating		82	Paræsthesiæ		14
Weakness		74	Convulsions*		8
Tremor		73	Mental disturbances		8
Visual disturbances—			Hunger		7
Amblyopia	43	71	Auditory disturbances—		
Diplopia	24		Deafness	5	6
Flashes of light	2		Tinnitus	1	
Yellow vision	2		Dysarthria		6
Dizziness		67	Hot flushes		6
Incoördination of limbs—			Cold flushes		5
Arms and legs	19	41	Nocturnal enuresis		5
Arms only	5		Olfactory disturbances		3
Legs only	17		Palpitations		3
Headache		33	Gustatory disturbances		2
Disorientation in time and/or space		32	Dyspnœa		1
Unconsciousness*		30	Nausea		1

* It will be seen that a surprisingly large number of the patients complained of the symptoms of "unconsciousness" and "convulsions," and it is probable that the well known uncertainty of the average out-patient as to what really constitutes these conditions makes the numbers higher than is actually the case

The general incidence of 62 per cent is high, but in many of the patients, especially the younger ones, the dose of insulin required to keep them in good health is not far removed from that which will produce hypoglycæmic symptoms Sonne has stated that, in a series of 50 patients, no less than 96 per cent showed some evidences of hypoglycæmia when observed over prolonged periods On the other hand, Oppenheimer, in a series of 1500 cases, found that in only 2 7 per cent were the reactions at all serious In spite of the enormous number of diabetics treated on insulin in the past 12 years, comparatively little has been added to the original clinical description of insulin hypoglycæmia given by Campbell and Fletcher in 1922 Two symptoms recorded here which are not referred to in the standard text-books or in such comprehensive reviews of the subject as those of Sigwald and Wauchope are yellow vision (two cases) and nocturnal enuresis (five cases). It is of interest to note that Lindquist has observed that in dogs insulin appears to have a specific effect on the urinary bladder, causing increased tone and motility, unrelated to convulsions or increased intra-abdominal pressure

Treatment —The only procedure which will alleviate the symptoms of hypoglycæmia is to increase the amount of sugar in the blood. The order of effectiveness of the various carbohydrates for this purpose is given by Campbell and Macleod as glucose, maltose, galactose, lactose, sucrose, lævulose, glycerin, and starch There is no question that glucose is *by far* the most effective agent. The only other of these substances likely to be available in ordinary circumstances, sucrose and starch, are of value in mild cases, but where time is of importance or oral administration is not possible, they are practically useless In mild cases, 10 to 50 g of glucose by the mouth is convenient and adequate, but where the patient cannot or will not drink freely, the intravenous route should be used Although isotonic solutions (5 5 per cent) are usually advocated, solutions of greater strength (25 per cent, or more) can be given slowly with complete safety and are more convenient to handle as the smaller bulk permits the use of a large syringe rather than the more cumbersome infusion apparatus If no suitable veins can be found, injection into the peri-femoral space can be employed. Rectal administration of glucose is uncertain on account of difficulties of retention and slowness of absorption, and it should seldom, if ever, be necessary to resort to it The subcutaneous injection of adrenaline also has little to recommend it, as its effectiveness depends on the presence of an adequate store of glycogen in the liver—a condition able to be lacking in the diabetic In any case, its ction, although rapid, is transient

Prevention —Attention to diet and dosage of insulin s, of course, essential In spite of the variety of manifestations seen in hypoglycæmia, it has frequently been observed that the initial symptom in any one subject is nearly always the same in successive attacks Every patient, therefore, on being put on insulin treatment should be given a deliberate overdose as was advocated by the early Toronto workers There is no difficulty or danger if the patient is under skilled observation in a hospital or nursing home By this simple means the presenting symptom is made known to the patient and to his medical attendant so that in the future any insulin reactions can be recognised and promptly dealt with as soon as they appear If this practice were carried out and if all diabetics were persuaded to carry glucose tablets or barley sugar, the inconveniences and possible dangers of hypoglycæmia would be practically non-existent.

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THE POINT OF ENTRY IN TUBERCULOUS INFECTION

By Charles Cameron, M D, F R F P S Glasg

MEDICAL SUPERINTENDENT OF THE SOUTH EASTERN COUNTIES OF SCOTLAND JOINT SANATORIUM, EAST FORTUNE

With certain well-defined exceptions it happens rarely that the portal of entry of the tuberculous infection can be demonstrated, and the primary focus of disease rarely coincides with the site of entry of the bacillus Cornet's law, that a primary lesion is produced at the site of entry in addition to a lesion in the tributary lymph glands, holds good on occasions only, for the bacilli as a rule effect their passage through mucous surfaces without leaving any trace of their point of entry

The primary focus is seen par excellence in the primary lung complex (Ghon, Ranke) and, in rarer instances, in tuberculous lesions of the tonsil, although, as this structure belongs to the lymph system, disease in it is perhaps strictly a secondary manifestation Be that as it may, actual tuberculous disease of the tonsil is far from rare, and, as the disease represents a holding up of the bacilli at their point of entry into the body tissues, it may be considered a true primary focus

Enucleation of tonsils has been performed in 44 patients in this sanatorium In 9 the tonsils were not examined Reports of 7 have not yet been received Of the remaining 28, in 7 (25 per cent) histological examination revealed the presence of tuberculous foci Six of these patients had caseating neck glands, the tonsillar group in all having the greatest area of disease One had tuberculosis of the lumbar spine, and had intermittent swelling of the tonsillar glands The ages ranged from 11 months to 13 years

Calmette states that, despite the frequency of contact of the skin with infectious material (sputum and bacillus containing excretions) cutaneous tuberculosis is rare, and, clinically, primary tuberculosis of the skin is not a common entity

In the section of dermatology of the Royal Society of Medicine[1] Dr Arthur Burrows (for Dr W J O'Donovan) recently demonstrated a child of one year who had developed, at the age of three months, a patch of lupus on the left cheek, followed by swelling of the left preauricular gland, from which caseous material was evacuated by incision The child's father had tuberculosis of the lungs

> "In this case," remarked Burrows, "we have a definite primary tuberculous lesion of the skin leading to the formation of secondary glands, and it is possible, as other cases have been observed elsewhere, that skin infection may more often be the cause of chronic tuberculous glands than is usually thought to be the case"

In the subsequent discussion Dr H C Semon remarked on the rarity of the condition and referred to three cases reported in Germany Dr Hugh Gordon spoke of a published case of his own, and Dr H W Barber referred to Lehmann's well-known publication of 10 cases of primary penile lesions, which followed circumcision by a phthisical rabbi

Holt, quoted by Calmette,[2] has collected from the literature notes of 41 similar cases, 17 of which to his knowledge ended fatally

The object of this communication is to place on record details of two cases of primary cutaneous tuberculosis, one of which followed a scratch accidentally inflicted

Case 1 Photograph taken on July 3rd, 1934 The glandular sinus is now small and healing

Case 1 —The patient A B aged 21 months was admitted to the sanatorium in December, 1933 During 1931 her aunt, C D aged 14½ years, was a patient in the sanatorium with advanced cavitary lung tuberculosis She produced no sputum but the X ray film confirmed the all too obvious clinical findings She left the sanatorium in February, 1932, and died in August, 1933, in her own home, which was about one mile distant from that of her married sister, the mother of A B A brother (uncle of A B) has had a recent period of treatment in the sanatorium for lung tuberculosis (sputum T B +), and a married sister (aunt of A B) is at present in the sanatorium suffering from advanced abdominal tuberculosis All of this tuberculous disease is on the mother's side, and A B has been a frequent contact of all of the infected members. Her mother and an unmarried sister who lives in the mother's household are, according to a statement made to me by the former well At the time of the accident to be described, this unmarried sister was in the habit of visiting and tending her dying sister, C D

In June 1933 the unmarried aunt of A B, while lifting the child in play, accidentally inflicted with a dress buckle a long scratch just above the inner side of her left knee

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[1] Proc Roy Soc Med, 1934 xxvii, 713
[2] Calmette, A Tubercle Bacillus Infection and Tuberculosis in Man and Animals, Baltimore 1923

The scratch healed quickly, but in about a fortnight broke down in its central area. This open area persisted, sometimes as a crusted and sometimes as a moist sore. In September, 1933, A. B. fell from a chair, the seat of which nipped her left groin and caused a slight bruise. On the following day a swelling appeared in the groin, and by December a glandular abscess had formed. She was then sent to the sanatorium. The case notes made at that time state that "a small weeping vesicle like a herpes vesicle is present above the inner condyle of the left femur, and a large glandular mass occupies the left groin (oblique group of glands). The mass has softened, and an abscess has involved the skin." The Mantoux (1–1000) reaction was + + +.

No reference was made in the history, as given by the parents, to the presence of the vesicle, and its significance was only realised three months later when the vesicle had developed into a typical patch of lupus. The complete history was then obtained.

Meantime the glandular abscess had been incised and a large quantity of caseous material evacuated Healing is now in progress, but the patch of lupus is spreading. Small glands can be felt in her axillæ and in her posterior neck areas. In appearance she is now a happy, healthy child.

Pus from the glandular abscess was examined microscopically after the incision. No organisms of any kind were found. No attempt at culture was made.

CASE 2.—The clinical outline of this case is less clear-cut, but the case appears to me to be definitely one of infection via the skin.

E. F., aged 5½ years, was admitted to the sanatorium on July 7th, 1934, suffering from tuberculous disease of the right hip-joint. She lived next door to a tuberculous family, well known to us, one member of which died, at the age of 16, in the sanatorium of advanced pulmonary and renal tuberculosis, having in his earlier years been successfully treated by us for multiple lupus lesions. One younger member has skin lesions, but has not passed through our hands Another died at home some years ago of abdominal tuberculosis. Contact with this family has been intimate. The children of the two households went to school together, and helped one another with their evening lessons.

About six months ago E. F.'s mother noticed what looked like a soft wart on the right palm at the base of her (E. F.'s) right thenar eminence. At this time she was in excellent health The wart was painless and little attention was paid to it About a month after its appearance it became painful, and fomentations brought away a discharge of pus, which left an open centre which has healed and discharged intermittently since. About four weeks after the discharge appeared, swelling of glands in the upper part of the left side of her neck took place, and two months later—i.e., some four months after the warty mass appeared—the right hip-joint became painful. The child was now definitely failing in health, and her admission to the sanatorium was arranged.

She had then definite tuberculous disease of her right hip-joint The left tonsillar gland was enlarged to the size of a bean, and several glands of the size of peas were present in the upper third of the left posterior triangle. Smaller glands were present along the posterior border of the right sterno-mastoid muscle and in the right axilla. In the right palm, at the base of the right thenar eminence, there was a depressed scar of irregular contour, with a pink and slightly moist base, measuring approximately ½ by ¼ cm. The scar was surrounded by an indurated margin, scaling in areas, and containing five tiny warty masses, each containing pus below a hard horny cap I had little doubt of the tuberculous nature of the condition The Mantoux (1–1000) reaction was + + +.

The course of events in the second case is less clear, as the glandular distribution is more suggestive of a buccal or pharyngeal route of infection. The history is, however, sufficiently striking to justify publication. It is of interest that the child's mother, an intelligent woman, has been quite convinced of the tuberculous nature of the palm lesion on account of its resemblance to certain lesions in a member of the neighbouring family.

THE HISTIDINE TREATMENT OF PEPTIC ULCER

WITH A NOTE ON FIFTY-TWO CASES*

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THE treatment of peptic ulcer constitutes a problem lacking, as yet, an ideal solution; the last few years have seen greater coöperation between physician and surgeon, with a more critical appreciation of the indications for surgical treatment Adequate medical treatment, it is increasingly said, is usually satisfactory; but if by adequate medical treatment is meant that counsel of perfection—a month in bed with careful dietetic, drug, and nursing control—it is obvious that it can only be obtained by the few

In my own hospital practice there is a turnover of 1300 new out-patients annually, and during the last five years there has been an average of 130 patients suffering from peptic ulcer presenting themselves each year. In order to give them adequate in-patient treatment 11 beds would have to be set aside for this purpose alone I have computed that for the whole of the medical out-patient department (of which my own is but a part) 45 beds would be needed, and this does not take into account those who are admitted without attending as out-patients. Ulcer cases would occupy one-third of the adult medical beds, they would constitute a quarter of the total medical in-patients, and their stay in hospital would be 50 per cent longer than the average duration of stay Figures such as these require no elaboration, and they must be a fair sample of the experience of other centres.

It has been my practice during the last few years to use a simple dietetic and alkaline treatment which the patient did his best to carry out at home, and in-patient treatment was of necessity reserved for the failures and for those who seemed to need surgical treatment The imperfections of this arrangement are clear, they are such that experimentation with ambulatory treatment was justifiable, and it was decided to undertake the treatment of a series of cases by means of histidine injections, a method introduced by Aron, and based on experimental findings

This is a preliminary report, and in it will be given the more or less immediate results; favourable as they may seem, it must be emphasised that several years' work will be entailed before final conclusions can be reached My investigation of this method of treatment continues, for it seems important that a critical analysis of a large, consecutive series should be made in view of the scattered, but usually favourable, reports from continental clinics and from those who have drawn conclusions from the observation of but few patients

Peptic ulcers of the large, callous, or penetrating type appear to be sufficiently rare to be excluded in a consideration of the main problem; the commonly encountered condition is characterised by a relapsing course, with a seasonal aggravation in spring and autumn, and an undoubted tendency to spontaneous remission with or without disappearance of the radiological signs An appraisal of the results of treatment must therefore take note not only of the immediate results—this is a matter of a few months—but also of the effect upon the incidence of relapses, and this will require some years to accomplish

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* In this study the histidine used was Larostidin brand histidine, kindly supplied to me by the Hoffmann-La Roche Chemical Works, Ltd.

THE PARENTERAL TREATMENT OF ULCER

Parenteral treatment is widely used, and a critical review of it is not intended A number of methods have been recorded, but in many of them other and more orthodox treatment has at the same time been employed, so that a controlled experiment has frequently not been achieved A few of the more important may be mentioned

Pepsin—Glaessner [1] [2] has used a specially prepared sterile pepsin given in courses of thirty subcutaneous injections twice yearly he has treated a thousand cases, some in hospital and some ambulatory He records subjective and objective cure in about two thirds, but as his patients have had a special dietetic régime, olive oil before meals and a bismuth preparation after meals, it is difficult to evaluate the rôle of the pepsin injections The treatment is at present being used extensively in France

Sodium benzoate—Melocchi [3] states that injections intravenously of a solution of this substance have a specific antipeptic action and diminish the proteolytic power of the gastric juice; he treated 17 patients, but they were all kept at rest in bed and had a special diet, 8 were presumably cured and 8 much improved A strict régime without sodium benzoate might have achieved a similar result

Non-specific protein—Martin [4] used intramuscular injections of milk protein (Aolan) given on alternate days, avoiding a febrile reaction Most of his patients were at work and on their usual diet Of 95 patients, 78 per cent were greatly improved or clinically cured, after 1–4 years he followed up his cases and found of 60 who were traced that 60 per cent of them were clinically cured or greatly improved

Other methods—Other parenteral injections, usually of a protein nature, have been tried but not in convincing numbers

HISTIDINE

Aron and Weiss [5] [6] repeated the manœuvre of Mann and Williamson for the production of experimental gastric ulcers in dogs this consists of diverting the pancreatic juice and bile into the terminal ileum by resecting part of the duodenum, anastomosing the distal end with the terminal ileum, and closing the proximal end of the loop—the continuity of the stomach and the remainder of the duodenum being restored by an end to end anastomosis. In all the dogs after 10–28 days a peptic ulcer was produced in the stomach or jejunum, the animals became cachectic and anæmic, and developed profuse diarrhœa, ultimately they died of emaciation

Whilst the cause of the production of the peptic ulcer is disputed, Aron ascribes it to a profound digestive upset Food is subjected only to gastric and intestinal digestion, duodenal digestion is absent because there is no enterokinase in the colon to activate trypsinogen, and the bile causes such diarrhœa that the duodenal juices are rapidly expelled Hence the digestion of all foodstuffs—and especially of protein—is interfered with Aron, therefore assumed the possibility of amino acid deficiency and tried the effect on dogs of the parenteral administration of these substances. Lysine had no effect, tryptophane and histidine could prevent ulcer formation, and histidine itself could prevent the evolution of ulcer although the dogs still died, but without melæna

In this work Aron used intramuscular injections of 5 c.cm of a 4 per cent solution of histidine hydrochloride histidine is an amino acid indispensable to growth and weight preservation, it cannot be synthesised in the body owing to its imidazol nucleus, and it is the precursor of carnosine and histamine

Aron treated, either with histidine or histidine and tryptophane, 17 cases of peptic ulcers in all his cases the symptoms disappeared after a few injections, but the radiological signs in many persisted He has also had a further series, too recent to report upon He claims a rapid disappearance of vomiting and pain the general condition improves, intestinal hæmorrhage is rapidly checked, and there is little effect on gastric acidity The X ray changes are variable—recent ulcers disappear, the callous ones persist In his oldest cases the periodic crises did not come back at their usual time

Bogendoerfer [6] reports satisfactory results in 30 cases

AUTHOR'S OBSERVATIONS

Since February, 1934, a study has been made of histidine treatment in 52 cases of peptic ulcer, and there has been no selection except when distance made treatment impracticable So far as possible *histidine* has been the sole treatment, and except in 3 cases (one treated in bed at home and two admitted to hospital for study) the treatment has been ambulatory, no instructions about diet have been given, and no medicines ordered Additional treatment could not be completely avoided, for many of the patients are accustomed to diet themselves and to take an alkaline powder, but such treatment was haphazard and does not seem to be a source of serious error in the interpretation of the results A number of the patients remained at work and special arrangements were made at the hospital to enable them to have injections during their leisure hours

In all but one patient X ray control was available, *radiography* was carried out before treatment, immediately after its termination, and at intervals afterwards A recent follow up has been successful in all but three cases which could not be traced, and most of the patients have been radiographed again before the assessment of the results as set out below

Treatment consisted of the daily intramuscular injection for three weeks of 5 c cm. of a 4 per cent. solution of histidine local and general reactions were not met with, and in two cases 20 c cm were given daily for three weeks without demonstrable ill-effects.

Three patients require special mention One, a man who had previously had two gastric operations and numerous courses of medical treatment, had in patient treatment with histidine and developed during the period of treatment an attack of *melæna* which threatened his life, later a chronic unhealed duodenal ulcer was found at operation Two other patients were operated upon after unsuccessful treatment; in one an unhealed gastric ulcer was found and in the other no lesion could be discovered in spite of an abnormal radiogram and persistent symptoms. This case has been placed amongst the failures

In the accompanying Table the results are given under two headings the "immediate results" are assessed as soon as treatment has finished and the "later results" after the follow up of all treated cases Under a third heading are given those excluded from the "later results" because they are too recent—treatment having been completed within the last two months. No conclusions can be drawn as yet from the later results

The total duration of gastric symptoms has been noted, and whilst the failures show the duration, a successful result was nevertheless obtained in some of long duration.

Table showing Immediate Results

(Total cases, 54. Treatment completed, 52 Under treatment, 2)

Group A.—Symptom-free with normal radiogram	30 (d u 8, g u. 22)
Duration of symptoms: 2 weeks to 8 years Average 2 years	
Group B—Symptom-free with abnormal radiogram	10 (d u 3, g u 7)
Duration of symptoms. 2 weeks to 5 years. Average 2 years	
Group C.—Failures	12 (d u. 6, g u 6)
Duration of symptoms: 4 weeks to 9 years. Average 4½ years.	

FOLLOW-UP (total cases, 36)

Group A.—	Still symptom-free	15,	relapsed 3;	untraced 1
,, *B.*—		7,	,, 0;	,, 1
,, *C.*—	Still failures	7,	improved 1;	,, 1

TOO RECENT (total cases, 16)

Group A—	Symptom-free with	normal radiogram	11
,, *B*—		abnormal radiogram	1
,, *C*—	Failures		4

SUMMARY

The difficulty of adequate treatment of peptic ulcer cases is illustrated, and some of the methods of parenteral treatment are outlined. A review of the literature of histidine treatment is given, together with a preliminary note on the ambulatory treatment of 52 cases. It is hoped to analyse the ultimate results later.

The immediate results of histidine treatment, if expressed in percentages, are: (*a*) 58 per cent. of symptomatic cures with disappearance of the abnormal X ray findings; (*b*) 19 per cent. of symptomatic cures with persistence of some radiological abnormality, (*c*) 23 per cent. of failures. In a follow-up three patients relapsed, and one of the apparent failures improved—the cases of gastric ulceration seemed more amenable than those of duodenal ulcer, and those with a shorter history tended to react more favourably than those with a longer history.

Owing to the natural vagaries of peptic ulcer, and the tendency to spontaneous remission, final conclusions have not been drawn from this study. Nevertheless the results seem to be better than those of the more orthodox methods and quicker of achievement, whilst treatment on ambulatory lines has much to commend it

My thanks are due to my colleagues in the X ray department of the General Hospital, Birmingham—Dr Harold Black and Dr. C G Teall—for much extra work that this study has entailed, and to Miss Carte, of the medical records department of the hospital, who has been responsible for the clerical work and for the repeated following-up of the patients

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Clinical and Laboratory Notes

A CLINICAL SIGN OF MALIGNANT DISEASE OF THE LUNG

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IN several cases of malignant disease of the lung I have been greatly helped in the diagnosis by hearing the heart sounds conducted to abnormal parts of the chest by the tumour. A patient I saw this summer, who had in the past had several attacks of broncho-pneumonia on the left side, had what seemed to be an attack in the spring, which did not clear up, and a cough and often a temperature of 100° at night persisted The lower two-thirds of the left back were dull and breath sounds very weak, but heart sounds were quite loud over a large area in the middle of the left back, and vocal resonance was almost inaudible Last year, in a similar case, I heard heart sounds in front almost out to the right anterior axillary line Some time ago in a patient weighing 16 st. with slight hæmoptysis the hearing of heart sounds in the right third space for two inches from the sternum, with much diminished breath sounds and vocal resonance, enabled me to make the correct diagnosis of malignant disease

The heart sounds seem to be conveyed when the tumour is in contact with the heart; they are not heard when the growth is in the upper lobe or in the outer part of the lower lobe At the same time vocal resonance is very much reduced or abolished because of the blocking of the bronchial tubes

AN UNUSUAL COMPLICATION OF A FRACTURED PATELLA

BY J. R. MURRAY, M.B. Lond, D.P M.
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THE patient, a man aged 48, suffers from a delusional psychosis of many years' standing On the morning of June 13th of this year he was involved in a fracas with another patient in the course of which he fell to the ground. He broke his fall by clutching a piece of furniture which struck against his head, bruising it. Although it was established that his knee received no direct violence, on examination he was found to have a fracture of the right patella. This was of the type usually found in cases where the bone has been broken by muscular action—i.e, it was a complete transverse break across the bone with wide separation of the fragments.

The leg was put to rest on a back-splint with foot-piece, no side-splints were used. Two days later, when the preliminary swelling had subsided, I operated on the knee and approximated the fragments with silver wire. During the operation no tourniquet was used and at its close the patient was returned to the ward with the leg bandaged, but not tightly, to the back-splint The bandages were again inspected on the following day and were not found to be unduly tight On the second day after the operation the splint was removed and the leg was immobilised between sandbags As soon as the support of the foot-piece was removed, and before the use of the sandbags, the patient was noted to have foot-drop The foot was supported and local massage was begun at once. The operation scar healed by first intention and the local condition was satisfactory Foot drop, however, persisted and the electrical reactions when tested three weeks after the accident showed reaction of degeneration in all the muscles supplied by the external popliteal nerve except the peronei The patient was too unreliable to give any account of sensory changes Constant massage and electrical treatment were persevered with over a period and some improvement in voluntary power noted An X ray photograph showed the absence of any fracture of the head of the fibula, and the fragments of the patella in good condition

At the time of writing, five months after the accident, the condition is as follows There has been considerable, but not quite complete, return of voluntary power in the limb Complete reaction of degeneration is still present in the tibialis anticus, but there is a slight faradic response in the extensor longus hallucis The anatomical result of the wiring is excellent and the man has full flexion of the knee-joint

Foot-drop was not present before the accident During the subsequent operation the incision did not encroach upon the area of the nerve The absence of any injury to the head of the fibula which might have caused internal pressure on the nerve, and the absence of any source, such as tourniquet or splints, of external pressure, suggests the injury may have been caused by the same indirect violence which fractured the bone In the absence of any other theory to explain the facts, the literature concerning fractures of the patella was searched in the hope of finding an account of a similar case but without success

ON THE USE OF DIOXANE

FOR TRANSFERENCE OF TISSUES DIRECT FROM WATER TO PARAFFIN WAX

By A WEISSBERGER, Ph D

J Z YOUNG, M.A

FELLOW OF MAGDALEN COLLEGE, AND

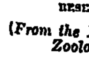
H M CARLETON, M A, B Sc, D Phil

RESEARCH FELLOW OF NEW COLLEGE

(*From the Departments of Organic Chemistry, Zoology, and Physiology, Oxford*)

THE use of dioxane as a substitute for both alcohol and clearing reagents preparatory to paraffin embedding has recently been advocated by Weissberger and Graupner in two short notes[4, 5] Weissberger's suggestion has been tested and extended by us on a variety of tissues, and we found it so valuable as to be worth describing for the benefit of English workers

Dioxane, or diethylene dioxide, is a cyclical ether, whose formula is—

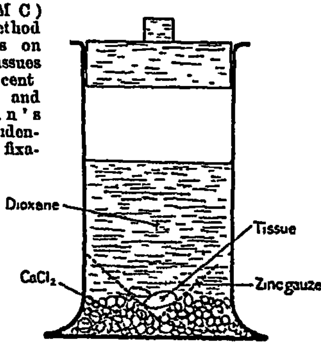


It is a clear, colourless fluid boiling at 101° C and freezing at 11 67° C It mixes readily with alcohol water, and molten paraffin wax, and the essential significance of this for both the pathologist and histologist is that a single process can be substituted for the various stages usually employed for dehydration and clearing

The procedure is as follows The tissues, having been fixed, are transferred from the fixative direct to pure dioxane contained in a well stoppered slide or specimen jar on the bottom of which a few granules of *anhydrous* calcium chloride or sodium sulphate have been placed (see Figure) A piece of surgical, or still better zinc gauze can be used to separate the tissues from the dehydrating agent Strictly speaking it is not the tissues which are dehydrated by the dioxane but the latter by the calcium chloride The shrinkage produced by this method is not [illegible] since the molecular weight of dioxane is not high, its molecule is relatively compact and it is not associated, therefore the difference between the diffusion rate of water from the tissues and its replacement by the organic solvent is less than when material is transferred direct from water to a high-grade alcohol

The duration of treatment in dioxane naturally varies both with the thickness and consistency of the tissues Small and thin pieces become water free in from 2–3 hours, while pieces of large surface area but not thicker than 2–3 mm have been found ready for embedding after treatment overnight (say 12–15 hours) The transference to paraffin wax is made through a mixture of equal parts of dioxane and wax as an intermediary, tissues being placed in this for one half to one hour in the embedding oven Embedding calls for no special comment, except that much time may be saved if the vacuum method advocated by one of us (H M C[1]) be employed

The dioxane can be used several times, or the once-used fluid can form a preliminary bath for subsequent specimens



One of us (H M C) tested this method against controls on pathological tissues fixed in 5 per cent formaldehyde and Heidenhain's "Susa" (Heidenhain[2, 3]) After fixation each block was bisected, one half transferred direct to dioxane and the other dehydrated in ascending grades of alcohol (in the formol-fixed series beginning at 50 per cent) and cleared in benzol No difference either in shrinkage or staining reaction could be detected between the two series.

It should be noted that dioxane was particularly effective after fixation in "Susa" But after other fixatives also both the absence of shrinkage and the ease of sectioning were remarkable Further, much time is saved by the "Susa"-Dioxane technique Normally tissues are transferred direct from this fluid to 96 per cent or absolute alcohol tinted with iodine in order to remove any mercury deposit Thence after a second bath of absolute alcohol, to the clearing fluid With dioxane, however, tissues may be placed direct in it after fixation A few flakes of iodine are added to the dioxane, and thus removal of the mercury precipitate, dehydration and clearing are simultaneously effected by a single process. Excellent results have also been obtained (H M C) after fixation in mercuric chloride-formol and Zenker-formol In the latter case the tissues were washed overnight in running water, as potassium bichromate is insoluble in dioxane

Dioxane is now being used as a routine in the preparation of sections both for students in histology and for research work. It has also been tested for general zoological and embryological purposes (J Z Y) Whole heads of larval lampreys fixed in Bouin's fluid were found to cut readily into serial sections after dehydration overnight in dioxane. The gonads of lampreys were also treated, and the mitotic figures and stages of gametogenesis appeared as clearly as in material dehydrated in alcohol. [illegible] method has been found particularly useful [illegible] routine investigation of large amounts of [illegible] material, since it so greatly reduces the number of operations necessary for embedding. In fact the cardinal advantages of the use of dioxane are speed and simplicity. With a rapidly acting fixative such as Susa, Bouin, or corrosive-acetic, small and thin pieces of tissues can be embedded in wax and sectioned 2–4 hours after fixing; larger pieces within 24 hours. Moreover, one is free from the tiresome drudgery of changing alcohols and clearing fluids at stated intervals.

One word of warning: dioxane vapour is toxic and casualties have occurred after its inhalation over prolonged periods under industrial conditions Vessels containing it should therefore always be well stoppered and the used product thoroughly flushed down the sink.

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* The cost of suitable samples of dioxane we found to vary from 7*s* to 9*s* the pound Melting-point estimations were very kindly made for us by Mr R B O'Brien, he found that our samples contained 5 per cent of water Provided the stock solution is kept over anhydrous calcium chloride or sodium sulphate, this does not matter

GAS GANGRENE OF THIGH AND BUTTOCK

A CASE TREATED BY OXYGEN IRRIGATION

BY W. B. FIDDIAN-GREEN, B.M. Oxon.

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INFILTRATION with hydrogen peroxide has been recommended in the treatment of gas gangrene[1] and the recent publication of a case of gas gangrene of an amputation stump treated by infiltration of afflicted tissue with 1/500 potassium permanganate solution[2] makes the following case, treated four years ago, of interest.

History.—A Pondo boy, about 22 years old, was admitted to the Randfontein Estates Gold Mining Co. Native Hospital on Sept 5th, 1930, with contusion of the right buttock caused by a fall of timber He had as well a small infected wound of the right elbow On the day after his admission his temperature rose to 102° F., and on the following day a large hæmatoma of his buttock was incised and thin blood-stained pus obtained On Sept 8th his temperature was 103°, so he was given 100 c cm. antistreptococcal serum intravenously in four 25 c cm. doses at two-hourly intervals At this stage the infection had spread rapidly and the whole of the right thigh and buttock was swollen and fluctuant

Operation and subsequent course—On Sept 9th multiple incisions were made in the thigh from knee to buttock and thin pus was obtained A further 100 c cm antistreptococcal serum was given intravenously, and this was repeated on Sept 10th, the wounds being irrigated continuously with eusol by Carrel-Dakin tubes The pus was sent for examination to the South African Institute of Medical Research and the report stated that hæmolytic streptococci were cultivated

The temperature dropped to 99° on Sept 12th, but rose to 103° next day, when the thigh and buttock presented a very swollen appearance, crepitus of muscle could be obtained and bubbles of gas could be expressed from the wounds while the characteristic smell of gas gangrene was present The boy at this stage was acutely ill and little hope for his recovery was held He was given 50 c cm. anti-gas gangrene serum (containing *Bacillus perfringens*, vibrion septique, *B sporogenes* and *B histolyticus*) intramuscularly, and the wounds were kept on continuous eusol irrigation. Stab-cultures were sent to the South African Institute of Medical Research for examination, and the report stated that *B welchii* (*B. perfringens*) and *B. coli* had been cultivated.

Oxygen irrigation treatment—On Sept 16th his condition was very grave; his temperature was remittent, reaching 104° at times and never dropping below 100°, the thigh and buttock were very swollen and discharging freely, and the muscles soft and putrefying As he had in no way reacted to the anti-gas gangrene serum, the eusol irrigation was discontinued and oxygen irrigation commenced. Three Carrel-Dakin tubes were inserted into the wounds, and so connected up that the whole buttock and thigh was subjected to a continuous stream of oxygen from a cylinder, led over water at the rate of about 120 bubbles a minute. This stream of oxygen was kept going day and night The temperature remained intermittent, but gradually fell until it was normal on Sept 25th The muscles looked healthy and the swelling decreased. The boy's general condition had much improved The temperature rose again on Sept 26th, but on the 30th it became normal and remained so At that date the limb had ceased to smell and the discharge had lessened The muscles instead of being swollen and putrid were red, healthy, and shrunken The skin was loose upon the muscles of the thigh and buttock, so that there was a communication subcutaneously from knee to buttock The edges of the incisions themselves were granulating.

The oxygen was discontinued on Oct 3rd and four hourly eusol irrigations commenced to aid the closing of the sinuses. The boy's appetite was good, tongue clean, and all signs of toxæmia gone. He was given iron, arsenic, and strychnine. The wounds healed up quite readily and movements were quickly regained Within two weeks of discontinuing the oxygen he was walking about on crutches and when last seen, at the end of October, he was walking with the aid of one crutch, and apart from flexion of the knee being limited to 15° he was perfectly well. He was discharged from hospital and repatriated.

The *B. welchii* infection in this case had spread rapidly right up to the buttock, leading to so severe a toxæmia that the boy was not expected to live While it must be admitted that the anti-gas gangrene serum may have reduced the toxæmia, this was not noticeable Furthermore, only one injection of the serum was given, and the improvement following the commencement of the oxygen was most marked In this case it was attempted as a last resort—amputation being out of the question—without previous experience, on the assumption that if the tissues could be infiltrated with oxygen the growth of anaerobic organisms might be arrested and toxæmia reduced, when further surgical intervention if necessary might be considered As it happened the result was very gratifying and no further treatment was necessary.

A second, though milder, case of gas gangrene of the palm (no notes available) from which *B welchii* was cultivated, gave similar results.

Although it is impossible to draw conclusions from two cases and no further cases have been available for treatment, the method gave such excellent results that it would commend itself to further trial despite its obvious expense.

I am indebted to Dr P. A Peall, senior medical officer, Randfontein Estates, for permission to publish this case

Matatielo, East Griqualand, South Africa

HOSPITAL WAKING HOURS.—Following the recommendation of King Edward's Hospital Fund that the most suitable hour for waking patients is 6 A M, only 15 per cent. of the total number of patients in the London voluntary hospitals are now awakened at an earlier hour (In 1931 the percentage was 53) The reasons adduced for earlier wakening are to be examined by the visitors of the fund at the next annual inspection

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[1] Wheeler, Sir W I de C., Med Annual, Bristol, 1934, p 193

[2] Warnshuis, F. C, and Kolk, B V. Jour Amer. Med. Assoc, 1934, cii, 1757.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

At a special meeting of Fellows held on Nov 29th, with Dr ROBERT HUTCHISON, the president, in the chair, Prof G R MINOT, of Harvard University, delivered an address on

Some Aspects of Anæmia

He said that the tendency in recent years when confronted with a case of anæmia was for the physician to decide at once that iron and liver were indicated, and often these were prescribed before the particular patient's defects had been properly investigated Especially had there been a tendency to forget that proper therapy depended on an understanding of the mechanisms which produced anæmia, and the great importance of a correct diagnosis Many cases of anæmia could be attributed to defective or deficient nutrition, and this nutritional defect could arise in ways other than from a deficient diet A multiplicity of factors might be responsible, indeed a depletion of any of the sources of material needed for blood building The disease in man was unlike that experimentally produced in the laboratory animal, for in the latter was produced only one deficiency at a particular time In man there might be damage to any organ of the body, to the cardiovascular apparatus, including arterio sclerosis, and so on, and it was necessary to ascertain the defect and the cause of it in each case, so making an individual study of each patient essential

The principle carried out, stated briefly, was replacement treatment on a quantitative basis. Attention must be devoted to treating the complicating factors, and in treating the anæmia per se one must not forget the patient himself In considering pernicious anæmia it must be realised that it consisted of more than disease of *blood forming* tissues, it involved the central nervous system and the gastro intestinal system, and the treatment must aim at improving both of those systems Diagnosis must therefore include the use of the stomach tube and the use of the tuning fork Also, the blood examination must include measurement of the cell volume, and possibly diameter by means of the Price-Jones curve. Lack of gastric secretion and lack of some essential food factor, such as meat muscle, might both be ætiological factors. In Addisonian anæmia there was always a deficiency in gastric function Certainly an important factor in the causation of anæmia was an inability to absorb and utilise substances eaten It was not yet known exactly what liver extract was, as the exact nature of its components had not been identified If the basic substance was lacking, especially in sprue and in pregnancy, it might be due either to defective food or to a failure in the gastric function Absorption was difficult also in cœliac disease and a relapsing anæmia might arise from complete removal of the stomach, and from anastomosing and short-circuiting operations on the small intestine

Was there any such thing Prof Minot said, as a disorder of internal metabolism of the liver? It was conceivable that some of the macrocytic anæmias might be due to such a condition though of that the lecturer had no evidence A deficiency in absorption was intimately associated, in many cases, with achlorhydria, or the deficiency might be due to the material in the intestine being hurried along too quickly, or to diarrhœa In anæmia there was a want of blood-building material, and in such a condition as pregnancy there existed an extra demand, in the form of the fœtus who required, for instance, extra iron, which might dangerously deplete the mother's supply There was a very wide zone which could be spoken of as partial deficiency, and if a person continued in that zone for a long time he would get nearer and nearer to, and finally be a case of, actual deficiency disease, with a clear-cut symptomatology like that of scurvy If a person on the upper zone of nutrition picked up an infection it would take him to the *lower zone, and the transit* into distinct deficiency would be rapid

TWO MAIN CONSIDERATIONS

In the production of all anæmias there were two main considerations the character of material ingested by the mouth, and the state of gastro-intestinal function If only one of these was at fault the patient might go along fairly well, but if both were markedly defective the case would be one of definite deficiency disease. There might be some inhibitory factor at work in the utilisation of the nutrition taken in by the mouth, some of the organs and tissues concerned might be abnormal Even after the body had manufactured sufficient hæmoglobin, it might lose it by a chronic blood loss, a result similar to that from taking food with an inadequate content of iron He had been interested in making an inquiry into how long it took to diagnose pernicious anæmia In a large series it took, on an average, one and a third years to arrive at a diagnosis once the symptoms had become established When there was in addition a gastro intestinal lesion, the time taken for the diagnosis was over two years, and when there were nervous complications it took over a year Yet in many of the cases there was such a definite condition of anæmia that it practically stared the physician *in the face*, and so the diagnosis ought to have been arrived at quickly It was especially important to make an early diagnosis in patients who had cord lesions. In these, much unnecessary suffering would have been avoided if a recognition of the character of the illness had been made before the nerve symptoms became more than slight Many patients with pernicious anæmia gave a long history of previous indigestion Ill defined symptoms referable to the small intestines were quite common, in some these symptoms had dated back as long as 20 years, others had had recurring "bilious attacks," nausea, epigastric discomfort, and in an important proportion there was a gall bladder symptomatology. In 23 per cent there was proved to be gall bladder trouble If a case did not clear up pronouncedly on liver treatment it was probable that gall stones or chronic cholecystitis were complicating factors In a series of cases the spleen was found to be palpable in about 35 per cent The occurrence of other conditions such as carcinoma of the stomach, sometimes would upset the diagnosis. An interesting question arose as to whether there was a greater incidence of malignant conditions among people who had pernicious anæmia than among the mass of the population He had not yet worked out the full statistics, but there was no evidence that cancer was more frequent among people suffering from pernicious anæmia age for age Myxœdema among pernicious anæmia patients was not common nor was it very rare. Many papers had been written seeking to show a coincidence between diabetes and pernicious anæmia, in nearly all the quoted cases the diabetes had been a supervention some years later than the onset of the anæmia. Thirty of a hundred cases of pernicious anæmia had, symptomatically, some chronic arthritis, indeed some had it a considerable time before they were found to be suffering from anæmia; that was partly due to lack of appreciation of the cord symptoms by some physicians, and partly because the arthritis was so prominent that nothing else was seen in the picture. Many had thought the blood state was a secondary consequence of the arthritis, instead of recognising that the main condition was the pernicious anæmia.

If failure was met with after liver treatment, he thought it meant either that the treatment had been inadequate in quantity, or that the patient suffered from a condition, such as infection, sufficiently severe in itself to lead to a fatal issue.

A rare condition, refractory to liver treatment, which was now being studied by Prof. Minot's colleagues and himself was, so far, a puzzle. Three patients had shown a macrocytic anæmia, with a normal amount of hydrochloric acid in the stomach; and no leucopenia, in contrast to the so-called chronic aplastic anæmia; tongue and spinal cord symptoms were also absent. The patients had lived, so far, three years, and liver had no effect on them, nor had any other therapy known to him. One case at autopsy showed red marrow and there was no outstanding disease of the liver.

MAINTENANCE TREATMENT

The modern treatment problem was not so much how to get the patient over the more severe symptoms, but, rather, how to determine the best maintenance treatment for each particular patient; the great aim must be to keep the patient in as good a state of general health as possible. The reservoirs of his body must be filled up, and the treatment and care thereafter must be the optimum. Obviously, as one was treating the individual patient, there could be no such thing as standardisation in treatment. He was quite sure that the prescribing of arbitrary amounts in a general way had been responsible for a great deal of unnecessary illness. Each patient must be given a sufficient reserve to meet all likely demands. Probably it took more to prevent the progress of neural lesions than it did to permit a maintenance of the blood elements at a healthy level. The question of what could be done for the neural lesions was one that had been a good deal debated. The idea of what was possible should not be based on the degree of improvement, but on the evidence available that the process had been arrested. Sepsis exercised a deleterious effect, as it inhibited the effect of liver extract on the cord. When reading reports of unfavourable results of treatment in the disease it was not difficult to see that there was a widespread failure to recognise that there was no standard dose applicable to all cases. And it must be remembered that the different preparations of liver used and advertised throughout the world differed widely in merit, strength, and constitution. Prof Minot spoke of a considerable series of patients with pernicious anæmia, all of whom were treated with intramuscular preparations, the average amount given being equivalent to 50 to 100 g. of fresh liver per week. In no single instance did an objective neurological sign become more marked, and no abnormal sign appeared. There was objective arrest in every case, improvement in all, though in two cases this was somewhat slight. The sooner treatment was commenced after spinal cord lesions were evident, the better the result. More must be done for these patients than to give liver extract; they must have re-training exercises for the muscles, and proper attention must be given to the circulation. If for any reason these patients were kept in bed for a time, on getting up and about again they would notice their disorder more than would a normal person. It was better to give 1 c.cm. intramuscularly once a week than to give large amounts of liver extract by the mouth, by the former means the liver given was 15 to 20 times as potent. Patients who had cord lesions as well as blood defect must be watched, and asked to report periodically, for individualisation was the important keynote to satisfactory treatment. If a patient was on appropriate liver, he did not need iron, but if the colour-index was diminishing, iron must be given in addition. But there were cases which did not seem to be doing well in which what was needed was not iron, but more liver.

POTENCY, CONCENTRATION AND DOSAGE OF CURATIVE AGENTS

It was very important, said Prof Minot, for the physician to know what was the material he was using, and what it might be expected to do. Some of the extracts on the market were not sufficiently potent, and it must be remembered that three times the concentration did not mean thrice the potency. Some cases which seemed rebellious to liver medication by the mouth responded well to the intramuscular preparation. More liver was needed for older than for younger patients, in the case of the former especially when arterio-sclerosis or cardiovascular disease was present. No doubt chronic fatigue could act in an inhibitory way, and hence part of the treatment should be directed to seeing that this fatigue was prevented by proper sociological treatment. If it was decided to use iron, the important thing was to use enough of it; the particular salt selected was unimportant. Seldom was this needed to be given intramuscularly, to use iron in this way it was necessary to approach closely to the toxic boundary, and the patient would have uncomfortable symptoms. Many patients had need of iron in addition to liver extract. He thought the effects of liver and iron for the same patient, in varying proportions, was a subject well worthy of further study. Some patients might do better with both than with either separately. In some cases it might be desirable to give both, so as to accelerate the rate of regeneration. He projected a slide giving particulars of the case of a woman who had idiopathic hypochromic anæmia, and who required that iron be given indefinitely. While she was taking iron her hæmoglobin was normal, but if she abstained from it for two or three months the hæmoglobin was found to fall. Such cases needed continual watching, so as to keep the hæmoglobin at a healthy level. He asked the meeting to appreciate that there were other substances in liver than the liver extract factor effective in pernicious anæmia. It had been found by Dr Whipple that the liver extract factor effective in pernicious anæmia had practically no effect on experimental dogs made anæmic by hæmorrhage. There was, however, in liver a second factor which was effective in such anæmic dogs. This had been little studied in human beings and he hoped that more would be heard about it with the progress of time. He said he would like to take the opportunity of bringing to the notice of the meeting some new work of physiological interest which had been done by Dr. Patek and himself recently on the possible effects of bile and other pigments in the manufacture of hæmoglobin There had been some discussion in the past as to whether bile pigments were absorbed or not They had found that if bile pigment was given daily to patients with idiopathic hypochromic anæmia there was no response When it was given together with suboptimal amounts of iron there was a definite reticulocyte rise, which would not have occurred in response to the iron alone Chlorophyll had also been studied in various ways, but only recently had pure chlorophyll preparations been available Observations had been made on the treatment of 15 cases of idiopathic anæmia with chlorophyll When the chlorophyll preparations were added to iron there was a definite reticulocyte rise and an increase in the rate of hæmoglobin manufacture It seemed evident that, whether given intramuscularly or orally chlorophyll preparations did accelerate the use of iron He and his colleagues had no idea how the chlorophyll worked in this connexion He was anxious to safeguard himself against any suggestion that chlorophyll or bile-pigment must be given to all cases of idiopathic hypochromic anæmia, because first-rate iron preparations, in sufficient quantity, would accomplish what was required in 99 per cent of cases. But the study, he felt, might result in a better understanding of the mechanisms by which iron could be utilised in the body

In conclusion, Prof Minot said that in spite of recent advances in our knowledge of the anæmias much still remained to be learned The careful study of patients at the bedside was as necessary as ever

GENERAL MEDICAL COUNCIL

WINTER SESSION, NOV 27TH–30TH, 1934

Penal Cases reported by the Dental Board

The Case of John Herdman Faulding, registered as of 22, Earlsbrook road, Redhill, Surrey "Dentist 1921," who had been convicted, having pleaded guilty, at the Reigate Borough Petty Sessions of feloniously and fraudulently embezzling two sums of £2 each received by him from his employer, and had been sentenced to two months' imprisonment The Board had found that Mr Faulding's name ought to be erased from the Dentists Register Mr Faulding attended, and the Council, after deliberation in camera, directed the Registrar to erase his name

The Case of Thomas Ross Graham, registered as of 15, West street, Faversham, "Dentist 1921," who had been charged with various canvassing offences The Dental Board had heard oral evidence and received documents and had found that the name of Mr Graham should be removed from the Register Mr Graham attended and addressed the Council on his own behalf After deliberation in camera the President announced that the Registrar had been directed to erase the name

The Case of William Gray, registered as of 243, St James' road, Glasgow, C 4, "Dentist 1921," whose case had been reported by the Department of Health for Scotland The charge related to a dental letter issued by the National Amalgamated Approved Society The Dental Board had found that Mr Gray had signed the letter and endeavoured to obtain money for the work although it had been carried out by another dentist who had been declared by the Department unsuitable for service in connexion with dental benefit The Board recommended the erasure of Mr Gray's name Mr Gray was not present nor was he represented, but Mr C J S Harper, the Council's solicitor, read a letter from him His name was erased

The Case of Walker Hall, registered as of 40, Hurst-road Erith, Kent, "Dentist 1921," also charged with offences in relation to a dental letter He had wrongfully obtained payment from the Prudential Approved Society for a set of dentures which he had not supplied, the case had been reported by the Minister of Health Mr Hall did not attend and was not represented A letter from him was read by Mr Harper, and his name was erased

The Case of William McCulloch Lawson, registered as of 11, Promontory terrace Whitley Bay, Northumberland, "Dentist 1921" Mr Lawson also was charged in connexion with a dental letter issued by the Royal Liver Friendly Society, on which the Dental Board had found that he had wrongfully obtained payment for a set of dentures which he had not supplied Mr Lawson was neither present nor represented The Registrar was directed to erase his name.

The Case of Samuel Morrison, registered as of Charing Cross, Larkhall, Lanarkshire, "Dentist 1921" He had appeared before the Dental Board on charges reported by the Department of Health for Scotland relating to dental letters issued by the National Amalgamated Approved Society and the Independent Order of Rechabites Approved Society He had claimed to have carried out certain work and examinations which had in fact been done by another, one who had been declared unsuitable for service under dental benefit, thus enabling this man to obtain payments Mr Morrison was not present, nor was he represented Mr Harper read a letter from him His name was erased

The Case of Joseph Reay, registered as of Main-street, Hensingham, Whitehaven, "Dentist 1921" This respondent also had been charged with claiming money for dentures not supplied, by means of a dental letter issued by the Navy, Army, and Air Force Insurance Fund Mr Reay was neither present nor represented, but a letter from him was read. His name was erased

Penal Cases Adjourned from Previous Sessions

The Case of Frederick Richard Lanfear Miller, registered as of 53, Pembridge Villas, Notting Hill Gate, London, W 11, M R C S Eng 1922, L R C P Lond 1922, who had been summoned to appear before the Council on the charge of being convicted of being in unlawful possession of dangerous drugs and sentenced to 12 months' imprisonment Mr Miller appeared on Nov 28th last year,[1] and the Council postponed judgment for a year He now appeared again, accompanied by Mr Thomas Carthew, counsel, instructed by Messrs Le Brasseur and Oakley, solicitors, on behalf of the London and Counties Medical Protection Society Mr Carthew addressed the Council and put in testimonials from respondent's professional colleagues, showing that respondent had completely abandoned the use of drugs and was a capable and trustworthy practitioner The Council did not direct the erasure of Mr Miller's name.

The Case, adjourned from Nov 29th 1933 of *James Scott Webster,* registered as of 31 Bank road

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[1] THE LANCET, 1933 ii., 1274

Bootle, Liverpool, M B, Ch B 1928, U Edin, who had been summoned to appear before the Council for offences against the Dangerous Drugs Act[2] Mr. Harper explained his vain efforts to trace Mr Webster, and read a telegram from him stating that he was ill but giving no address After deliberation in camera the Council decided to postpone the case until May

The Case, adjourned from Dec 1st, 1933,[3] *of Steven Tait Pottinger,* registered as of "Lyndhurst," Willenhall, Staffs, M B, Ch B. 1925, U Edin., who had been summoned to appear before the Council on charges of canvassing.

At the previous hearing the Council had found the charges proved but had postponed judgment Mr. Pottinger appeared in answer to his Notice, accompanied by Mr T. Carthew, counsel, instructed by Messrs. Le Brasseur and Oakley, solicitors to the London and Counties Medical Protection Society Mr. Carthew addressed the Council, putting in testimonials from respondent's professional colleagues and others, including one of the doctors whose patients he was alleged to have canvassed. After deliberation in camera the President announced that the Council had decided not to erase Mr Pottinger's name from the Register

The Case of Donald McGregor Stewart,[4] registered as of 5, Waunwen, Nantymoel, Glam, L R C.P. Edin. 1917, L R.C S Edin 1917, L R F.P S Glasg. 1917, who had been summoned to appear before the Council on Nov. 24th, 1932, on charges associated with driving a motor cycle without due care and attention and under the influence of drink The charges had been found proved and sentence postponed.

Mr. Stewart attended and was accompanied by Mr T. Carthew, counsel, instructed by Messrs Le Brasseur and Oakley, solicitors, acting for the London and Counties Medical Protection Society. Mr. Carthew read testimonials to Dr Stewart's conduct and reputation, and the President announced, after deliberation in camera, that the Council had decided not to erase the name

The Case of Victor Cecil Tughan, registered as of 4, Stanton-court, Greenhill, Weymouth, M R C S Eng 1925, L R C.P Lond 1925, who had been summoned to appear before the Council at its November session, 1933, on charges of drunkenness in connexion with a motor vehicle The charge had been found proved but judgment had been postponed.

Mr Tughan was present but was not legally represented He drew attention to the testimonials he had supplied, and these were read by Mr Harper. Mr Tughan said he was not now in practice and had completely changed his habits After deliberation in camera the President said that the Council had decided to postpone the case until the May session, when they hoped to receive testimonials from professional colleagues

New Penal Cases

CHARGES OF DRUNKENNESS

The Case of George Francis Maher, registered as of Ballymore House, Gooldcross, Tipperary, L R C.P. Edin 1925, L R C S Edin 1925, L R F P S Glasg 1925, who had been summoned to appear before the Council on the following charge:—

That you were convicted at the Sheriff Court, Edinburgh, of the following offences, viz —(1) On June 30th, 1933, of driving a motor-car while under the influence of drink to such an extent as to be incapable of having proper control of the said car, and were fined £20, and (2) On May 29th, 1934, of driving a motor-car while under the influence of drink to such an extent as to be incapable of having proper control of the said car, and were fined £20 and disqualified from holding or obtaining a licence for 12 months

There was no complainant in this case. The Council's solicitor described the two occasions and read Mr Maher's letter of explanation On the first occasion, he said, he had just been celebrating the winning of a Derby sweepstake, the second was on the occasion of the International Rugby match, when he had had an attack of influenza and was feeling very weak and feverish Mr. Maher briefly addressed the Council After deliberation in camera the President announced that the convictions had been found proved, but judgment would be postponed until November, 1935

The Case of John Joseph Macabe, registered as of 19, Mawson-street, Ardwick, Manchester, M B, B Ch 1918, N U. Irel, who had been summoned to appear before the Council on the following charge —

That you were convicted (1) On August 30th, 1934, at the Bolton County Police Court (in the name of James J Macabe), having pleaded guilty, of drunkenness at Little Lever on August 20th, 1934, and were fined 7*s* 6*d*, (2) On August 31st, 1934, at the Manchester City Police Courts (in the name of John McCabe) of being drunk and of riotous behaviour on August 30th, 1934, and were fined 10*s*, (3) On Oct 3rd, 1934, at the Manchester City Police Courts (in the name of John McCabe) of being drunk and of disorderly behaviour on Oct 2nd, 1934, and were fined 20*s*, (4) On Oct 4th, 1934, at the Dewsbury Borough Police Court (in the name of John McCabe), having pleaded guilty, of being drunk and disorderly on Oct 1st, 1934, and failing to appear to summons, and were fined 27*s* and £1 11*s* costs or 28 days' imprisonment in default"

There was no complainant in this case Mr Macabe attended. Mr. Harper gave an account of the circumstances in each case, and recalled previous convictions registered against Mr Macabe for drunkenness and assault. He had been put on probation by the Council in 1927–28, and his name had been erased in May, 1929, and restored in November, 1932 Mr Macabe addressed the Council, asking for another chance After deliberation the President announced that the Council had found the charges proved and had directed the erasure of Mr. Macabe's name

CHARGE OF ABUSE OF POSITION

The Case of William Lock, registered as of 9, Argyle close, Ealing, London, W.13, L R C P Edin 1900, L R.C S Edin 1900, L F.P.S Glasg 1900, who had been summoned to appear before the Council on the following charge:—

1. That being a registered medical practitioner you committed adultery with one Mrs Agnes Brewer, a patient of yours, on frequent occasions since 1929 2 That by reason of the said facts you have abused your position as a registered medical practitioner And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect

At the hearing in May Mr. Lock was unable to be present owing to ill-health Mr. Edgar H Hiscocks, solicitor, who represented the complainant, applied for an adjournment of the case on this ground until the November session, and the application was acceded to

The complainant was Mrs Aida Winifred Rebecca Lock

This case was heard in camera, and at its conclusion the President announced that the Council had not found the facts proved to their satisfaction.

The Case of Ian Duguid, registered as of Avenue House, Rochester, Kent, M B, Ch B 1924, U Edin, who had been summoned to appear before the Council on the following charge —

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[2] THE LANCET, 1933, ii, 1335
[3] THE LANCET, 1933, ii, 1387
[4] THE LANCET, 1932, ii, 1234

That being a registered medical practitioner you abused your position by committing adultery during the month of June, 1934, and thereafter, with Mary Skinner, a married woman, whom and whose husband and children you had attended professionally And that in relation thereto you have been guilty of infamous conduct in a professional respect

The complainant was Mr Stanley Charles Skinner The respondent was not present Mr Harper gave evidence of serving a Notice of Inquiry The complainant was represented by Mr Van Oss, counsel, instructed by Messrs Wood, McLellan and Williams, solicitors.

Mr Van Oss explained the facts of the case At the end of 1932 the respondent, with his sister and brother, had taken over the practice of a doctor who had previously attended Mrs Skinner and the two children. In that way and that way only had respondent been able to meet her It had then come to complainant's notice that the doctor and complainant's wife were arranging to go away together On June 8th, 1934, the wife had left home and had not returned She had lived with Dr Duguid as his wife for two months

Mr Skinner testified to his statutory declaration, confirming these facts, and including a letter from his wife admitting them, and begging him not to get the doctor struck off the Register He produced cheque and accounts in evidence of the professional relationship

Mr Van Oss read a statutory declaration from the elder son of Mr Skinner, who was in a nursing home, recording a confession by respondent that he and Mrs Skinner intended to run away together

Mrs F Hunt testified to her statutory declaration describing how she had let a furnished flat to persons whom she identified as Mrs Skinner and Dr Duguid, and who had lived as man and wife

Mr F G White gave evidence that he had been a patient of Dr Ian Duguid's and knew him well, that he had accompanied Mrs Hunt when she had identified the gentleman who had rented her flat and had recognised him as Dr Duguid

After deliberation in camera the President announced that Dr Duguid had been found guilty of infamous conduct in a professional respect, and that the Registrar had been directed to erase his name.

Alleged Improper Profit

The Case of Leo Frederick Clarke, registered as of Gordon House, Highgate road, N W 5, L, L M 1925, R C P Irel, L L M 1925, R C S Irel 1925, who had been summoned to appear before the Council on the following charge —

That being a registered medical practitioner (1) You attempted in or about December, 1933 to obtain from Mr Richard Henry Ormsby, who was a patient of yours, payment of a sum of £2 2*s* for a pair of spectacles with which you supplied him, having purchased the same at a price of 7*s* 10*d* from a company in which you represented to the said Mr Ormsby that you had an interest, and (2) You attempted at the same time to obtain from Mr Ormsby payment of a sum of 10*s* 6*d* for repairs to another pair of spectacles executed on your behalf by the said company at a cost to you of 2*s* 10*d* And that in relation thereto you have been guilty of infamous conduct in a professional respect

The complainant was Mr Richard Henry Ormsby Dr Clarke attended, accompanied by Mr O Hempson, solicitor, and the complainant was represented by Mr J R Hodder, solicitor, of Messrs Hodder and [illegible]

Mr Hodder said that respondent had one day noticed that Mr Ormsby's spectacles were broken and had offered to get them mended Mr Ormsby had demurred, but the doctor had pressed his suggestion, saying that he knew an optical company and would see that complainant was not "stung" Mr Ormsby had asked for an account, but had never had one from the optical company, he had later received one from the doctor, which he had not paid He had had several letters from a debt-collecting society, and had finally been taken to the county court, where a judgment for £20 had been given instead of the £36 19*s* claimed During those proceedings the sums actually spent by respondent on the spectacles, as set out in the charge, had been admitted and the claim for two guineas withdrawn by Dr Clarke's counsel

Mr Ormsby testified to his statutory declaration and related the facts of the case

Cross examined by Mr Hempson, he agreed that he had taken the strongest exception to respondent's charges The glasses, he admitted, had not been mentioned in his letter to the protection association (which Mr Hempson read) Nor were the glasses mentioned in the affidavit of defence The letter declared that he would pay no more than 7*s* 6*d* a visit for a total of 22 visits, the affidavit raised a charge of negligence, which had eventually been withdrawn in court by complainant's counsel Judgment had been given for 40 visits at the rate of half a guinea a visit, and the cost price of the glasses, thus cutting down the charge per visit by 4*s* 6*d* Witness denied that he had done everything in his power to avoid paying the account Respondent had not defined his "interest" in an optical company but had certainly used the expression There was no prescription for the glasses. If Dr Clarke had read the glasses before and after the repair there might have been professional service, but if so it was certainly not at his request There had been no concealment of the charge for the glasses Complainant had wished to keep the transaction for the glasses quite separate from that for professional services Re examined, he said that counsel for Dr Clarke had withdrawn the charge for the glasses after a member of the optical company had given evidence, until then Dr Clarke had persisted in the charges In reply to Mr Eason he said the doctor had never tested his eyes *In reply to the Legal Assessor* he said he had had no dealings with the optical company, but the glasses had been handed to him by Dr Clarke

Mrs Ormsby corroborated her husband's evidence

Mr Hempson then called the respondent who said that he had attended Ormsby and rendered services, sending in an account for £36 10*s* He admitted that the charges made to him by the optical company were as stated and that he had charged Ormsby the larger sums alleged He considered himself entitled to the difference in return for the trouble he had taken in measuring the lenses, writing a prescription, sending the glasses to the company testing the lenses on return, and taking them to Ormsby's house by arrangement He had no interest whatever in the company Ormsby had not asked for the company's account, but had told him to include the charge in his bill Cross-examined by Mr Hodder, respondent admitted that in the county court he had not given a detailed description of the transaction He had not stated in court that he had performed any services in respect of the glasses In reply to a question by the Legal Assessor he said that he had not been in the witness box when his counsel had withdrawn these charges, and had therefore had no opportunity of making any such statement. He had handed the prescription back to the company and had not kept a copy. The transaction was quite an exceptional one. He could not have sent Ormsby to the company direct, as it was a wholesale business

Mr Hodder accepted respondent's assurance that he had no interest in the company.

Mr. Hempson in his address reminded the Council that it was a common practice for doctors to charge patients more for drugs, apparatus, trusses, and so forth, than the chemist or supplier charged them Respondent could not have justified passing on a wholesale charge to a patient If he had sent Ormsby to a retailer optician the charge would have been much higher.

Mr Hodder stressed the fact that respondent had never before the present hearing claimed to have performed any service in regard to the glasses.

The President, announcing the decision of the Council, said that a number of the charges alleged against Dr. Clarke had been proved to the Council's satisfaction—namely, he had attempted to obtain from Ormsby £2 2*s* for a pair of spectacles which he had purchased for 7*s* 10*d*, and 10*s*. 6*d* for repairs which had cost him 2*s*. 10*d*. Nevertheless, it having been agreed between the complainant and the respondent that respondent was not interested in the optical company which he had recommended to the complainant, and the complainant having obtained an abatement of the respondent's charges in the appropriate civil court, the Council had decided to take no further action in the case

A Charge of False Certification

Mr. Charles Joseph Pemberton Paglar, L M S Singapore Med Coll, 1917, appeared before the Council on a charge of having given a patient a Wassermann certificate which did not relate to his case The charges had been proved to the satisfaction of the Medical Council of the Straits Settlements and the Federated Malay States which had directed its Registrar to erase his name Against this decision Dr. Paglar appealed to the Supreme Court of the Straits Settlements, his appeal being dismissed with costs on August 16th, 1933 Dr Paglar appeared before the Council and gave an account of his actions; after deliberation in camera the President announced that the facts had not been proved to the satisfaction of the Council

Removal of Name from Register

After considering a report from its executive committee the Council directed the Registrar to remove the name of Ernest Melville Carefoot from the Register on a report from the College of Physicians and Surgeons of Saskatchewan that his name had been erased from its Register in consequence of his having been found guilty of unbecoming, improper, and unprofessional conduct. It had further been ascertained in correspondence that the qualification had not been withdrawn on the ground of the adoption of any theory of medicine or surgery.

REVIEWS AND NOTICES OF BOOKS

Atlas Fundus Oculi

By WILLIAM HOLLAND WILMER, M D, LL D, Professor of Ophthalmology of the Johns Hopkins University School of Medicine With an introduction by WARFIELD T. LONGCOPE, M D., Professor of Medicine, Johns Hopkins School of Medicine London: Henry Kimpton 1934 One hundred coloured plates, each with text £7 7*s*

IT is a pleasure to look through these plates of the normal and abnormal fundus oculi The original paintings from which they have been reproduced were made from private cases or for the various departments of the Johns Hopkins Hospital, and each plate has a short summary of the case and notes of the special points brought out in the picture Such an atlas is a luxury. Its utility must be limited by its costliness, for we can hardly suppose that many students will have access to it except in libraries Nor can we wholly endorse the opinion of the author that cheaper reproductions of similar conditions are unsatisfactory unless we define what is meant by unsatisfactory Certainly there are sound and beautiful books available which cover much the same ground as that occupied by Dr Wilmer's sumptuous treatise Photographs of the fundus such as those made by Messrs. Curry and Paxton lack the element of colour, but the fifty pictures of the fundus published three years ago by the late Ernest Clarke from coloured drawings in the collection of Messrs Hamblin serve much the same purpose, and the last English edition of Haab's Atlas illustrates about as many fundus conditions as this book But because there is much and such good material for our instruction available, there is no reason for not being grateful to an author and his publisher who strive to do better still, and we shall be surprised if at some future date Dr. Wilmer's book is not succeeded by something with an even larger range For the impetus to completion will not easily be satisfied It does not appear possible for all or even nearly all the conditions seen by the ophthalmoscope to be included in any pictorial treatise, and illustrations of typical cases and of a few rarities form the bulk of this work despite its size and wealth of illustration It is especially of interest in that it shows several types of negroid fundus and a few pictures of the normal fundus in animals The detailed description of each plate placed opposite to it is a valuable feature of the work We appreciate the immense industry and care which must have gone to produce a volume which will be an ornament to any library.

A Text-book of Midwifery

Seventh edition By R W. JOHNSTONE, C B.E, M.D., F.R C S E, M R C P E., F C O G, F.R S E, Professor of Midwifery and Diseases of Women, University of Edinburgh; Physician, Royal Maternity Hospital; Gynæcologist, Royal Infirmary, Edinburgh London · A. and C. Black, Ltd. 1934 Pp. 463. 18*s*.

ALTHOUGH only two years have elapsed since this text-book of midwifery was revised for its sixth edition, Prof Johnstone has found it necessary to make several changes The original arrangement of the subject is maintained The physiology of pregnancy, labour, and the puerperium is considered in full before any reference is made to the pathological aspect. Modern views of the physiology of menstruation are described in detail and the account of fœtal circulation is admirable The chapter on the management of normal labour has been extended. It is, as it should be, entirely practical, and the paragraphs which deal with the use and abuse of narcotic and analgesic drugs will be of great help to all who read em The management of the infant born in a ate of oligopnœa is excellently described The ction on treatment of hæmorrhage during pregnancy, gether with the underlying principles which should ude it, leaves the reader in no doubt as to the rrect procedure to adopt This is in refreshing ntrast to the practice in many other text books of ostetrics which give the student half a dozen or ore different methods of treatment and inadequate formation on the advantages and disadvantages of ach. The wisdom of immediate resort to the obstetric rceps when delivery of the after-coming fœtal head resents difficulties is emphasised

The book is easy to read and the illustrations xceptionally clear and purposeful The Aschheim-ondek reaction is depicted in colour In every way his is an admirable production

Anæsthesia and Analgesia in Labour

By K. G Lloyd Williams, M D , B S Lond , Hon Anæsthetist to the Royal Free Hospital London Edward Arnold and Co 1934 Pp 96 5*s*

This capital little book is divided into chapters which deal with the three stages of labour, with abnormal deliveries, and with anæsthesia and analgesia in complicated labour For the early part of the first stage the author approves of bromide and chloral All the commonly employed drugs and methods, including various barbiturates, are concisely discussed This applies also to the management of the later stages The book in fact provides an excellent summary of current measures for providing relief of pain in labour without showing a strong individual preference for any one of them There is also a good account of the proceedings necessary for resuscitation of the newly born

Dr Lloyd-Williams, rightly in our opinion, lays stress on the fact that it is in the early stages of labour that more relief is needed than is usually provided This applies especially to primiparæ As Dame Louise McIlroy points out in a foreword, the problem of defining the measures for relief of pain which may be employed by midwives in their practice has not yet found a satisfactory solution Our only criticism of the book is that the author has not given more attention in it to this particular subject, at the moment one of the urgent practical problems in obstetrics, taking into account the great proportion of confinements which are conducted by midwives

This work is entirely devoid of padding and should be most useful to house officers in maternity hospitals and to practitioners, while students would get valuable information from it

International Narcotics Control

By L E S Eisenlohr London George Allen and Unwin, Ltd 1934 Pp 295 10*s* 6*d*

Writing from Geneva, and after close association with the agencies of the League of Nations dealing with the matter, Mr Eisenlohr discusses the problem of international administration of the drug traffic He relates the history and objects of the international organisation which has been developed records the labours of the Opium Advisory Committee of the Permanent Central Opium Board and of the more recently established Supervisory Body for limitation of the manufacture of narcotic drugs The author freely criticises the work of the several international conferences and of the advisory committee of the League of Nations. He emphasises the fundamental necessity for restricting the production of the raw materials—the opium poppy and the coca shrub, which now at long last is claiming the attention of the League of Nations Mr Eisenlohr asserts that "it is almost incredible that in thirteen years of its existence the advisory committee has failed to put forward one comprehensive policy for ending the narcotic traffic" This he attributes to the composition of the committee and the too narrow view taken of the duties confided to it Its operations aimed rather at the "symptoms of the trouble than at its source" The author considers the creation of the Permanent Central Opium Board, now four years old, the principal achievement of the Second Geneva Conference of 1924 It was however a "compromise" between those who sought for a strong international supervision and those who reluctantly surrendered national control The state in which it was finally allowed to materialise is described by Mr Eisenlohr as being "clipped and tied" He attributes the more recent Limitation Convention to the pressure of public opinion backed up by the insistence of some of the more progressive members of the League's Assembly The two final chapters deal with the production of raw opium in India and in the Near East The unedifying story of the earlier history of the Indian opium trade is lightly sketched, and the working of the Governmental monopoly is described It is stated that since 1913, in spite of restricted output, reduced exports, and an even rate of consumption at home, revenue has been very greatly increased In the case of Turkey and Persia, both hitherto among the largest producers of raw opium, Mr Eisenlohr is hopeful that the new Government monopolies in course of establishment may result in a reduction of output of the raw material, and, indeed, the possibility of an international monopoly of narcotics is adumbrated as a desirable solution

The work is carefully compiled, its arguments are fortified by numerous references, and if somewhat hypercritical of the labours of others it is obviously inspired with a desire to abate a social evil which has grown to alarming proportions.

Synopsis of Genito-Urinary Diseases

By Austin I Dodson, M D , F A C S London Henry Kimpton 1934 Pp 275 12*s* 6*d*

The amount of knowledge that the general practitioner must possess, if he is to be able to act as a good adviser to his patient, is so great that it is almost beyond his capacity to contain it Whereas the consultant is in the happy position of being able to discard that which does not concern him, the general practitioner must have a working knowledge of every important advance that is made in the innumerable branches into which medicine is dividing itself Hence the necessity for synopses of medical specialties in which the essential facts are presented to the overworked practitioner Dr. Dodson, who occupies a chair in the Medical College of Virginia, describes the recognised principles of the practice of urology He summarises the signs and symptoms of genito urinary diseases the technique of examination, and the main points in diagnosis and treatment All unnecessary details, theories, and refinements are omitted The author has interleaved his work with excellent diagrams and illustrations that not only increase the understanding of the text but themselves furnish an excellent epitome of genito urinary knowledge

After reading this work, which in all contains only 275 pages, the reader who started with very little experience of urological problems will possess a good working knowledge of the subject.

Chronic Rheumatism: Causation and Treatment

By R FORTESCUE FOX, M D, F R C P Lond, F.R Met S., President of the International League against Rheumatism, Member of the Committee on Rheumatism of the Royal College of Physicians; and J VAN BREEMEN, Doctor of Medicine, Medical Director of the Central Institute for Physical Treatment in Amsterdam. London J and A. Churchill Ltd 1934 Pp. 364 12*s* 6*d*.

PHYSICAL treatment in the rheumatic group of diseases has for long had the reputation of being a rather haphazard, hit or miss measure This book should help to establish its value when it is used with skill and judgment. The rheumatic problem is here approached from an angle which those acquainted with text-books on this subject will find unfamiliar and stimulating In the opening sections are set out in detail the reasons underlying the use of physical methods of treatment, special attention being paid to skin reactions and in particular to circulatory abnormalities The ill-defined condition known as "chill" is discussed as a definite entity of very real importance, the authors believe what they call "chronic chill" to be a frequent precursor of disease The suggestion is not that this condition can actually be a cause of rheumatism but that a person whose body temperature is lowered in whole or in part is what the French call a "candidate" for illness, or, to use another metaphor, is like a loaded gun which a trivial touch may explode The terms pleo-thermal and peno-thermal are used to differentiate individuals according to their power of heat regulation, and the chilly peno-thermal person is held to exhibit a partial reversion towards the cold-blooded state The authors do not seem to have proved the connexion between "feeling the cold" and a subnormal temperature on which this argument is based, but few will dispute that exposure to cold is associated with at least the symptoms classed as rheumatic, and the comfort afforded by hyperæmic treatment is generally acknowledged.

A number of chapters are devoted to diagnosis and examination of rheumatic patients, accurate diagnosis being essential if the appropriate physical treatment is to be applied. Since physical stimuli excite very different reactions in different subjects each patient must be studied as an individual problem, it is made clear that this form of treatment cannot be applied as one might offer a stock prescription Then follows a description of the aims and methods in treatment, a valuable section which might well have been expanded; it serves as it is to show to the reader that the correct application of physical therapy needs special knowledge which can only be acquired by practice and experience One observation is well worth noting—that ultimately all rheumatic processes come to a standstill, and that often this is noticeable first in the joint first attacked The importance of this from the therapeutic standpoint is twofold First, the pessimism of the doctor may have driven the patient to seek advice elsewhere at the very moment when the condition ceases to progress, and the credit of this arrest, which is in fact spontaneous, may be given to others Secondly, it means that the position of the affected joints at every stage of the disease should be watched A number of patients unable to walk owe their disability not to the rheumatic process but to malposition. Thus even in the last stages of the disease treatment may be helpful.

The social and industrial aspects of rheumatism are discussed and a summary is given of reports presented at the Congress of Rheumatism held in Paris in 1932, the reports are from various countries, Sweden, Holland, Germany, Russia These show a consensus of opinion that what is required is a new special service for rheumatism consisting of expert diagnosis and advice, specialised treatment both at an early stage and in advanced conditions where re-education and amelioration is necessary. Finally a scheme is outlined for the adequate treatment of rheumatism and for the teaching of those who will undertake the treatment.

Sex Difficulties in the Male

Second edition By KENNETH M. WALKER, F R C S London: Jonathan Cape. 1934. Pp 254 5*s*

THIS is a new and completely revised edition of Mr. Kenneth Walker's book entitled "Male Disorders of Sex," published in 1930, of which we said: "We have nothing but praise for this book It is a practical work which should be in the hands of every practitioner." This commendation is no less appropriate when applied to this edition Primarily a specialist in genito-urinary diseases, the author lays no claim to being an expert psychologist; but he handles the psychological aspects of such problems as impotence, masturbation, and sexual deviations with a delicacy and objectivity not always found in the writings of his psychological colleagues This volume has genuine merit. It is carefully written in a readable literary style; it introduces into the text a sufficient number of case-histories, drawn from extensive personal experience, to prevent the exposition from appearing too academic; it is produced in an agreeable format, and is of such a length that it can be read from cover to cover in a long evening.

Insect Physiology

By V. B. WIGGLESWORTH, M.A, M D, Lecturer and Milner Research Fellow in Medical Entomology, London School of Hygiene and Tropical Medicine London: Methuen and Co., Ltd. 1934 Pp. 134 3*s* 6*d*.

THE study of insect physiology, until ten years ago practically neglected, has been largely stimulated by the growing need for more accurate knowledge of the workings of a group of animals whose importance in relation to agriculture and medicine is becoming more and more evident. Dr Wigglesworth, who has himself done much original work on the subject, has compiled an admirable review of the present state of knowledge. Those who know something of the physiology of the higher animals will be fascinated by the evidence here supplied of the extraordinary adaptability of living organisms The small size and terrestrial habits of insects result in an urgent need for the conservation of water. This need has affected the nature of the body surface, the respiratory, digestive, and excretory systems, and the method of growth Especially interesting facts have also been brought to light concerning the nervous and hormone mechanisms by which many activities are regulated. An insect satisfies the fundamental needs of a living organism by methods which are often strikingly different from those employed by the higher animals.

The general biologist will enjoy reading this book and, by reason of the excellent bibliography, it will be of considerable assistance to the specialist.

THE LANCET

LONDON SATURDAY, DECEMBER 8, 1934

A PREVENTIVE SERVICE

THE school medical service has been in existence for 26 years *Many of the parents of present day* school children have personal experience from their own childhood of the benefits to be derived from it It is an established piece of the framework of our social organism Those who are responsible for its administration, rather than its beneficiaries, are asking themselves whether it is properly fulfilling its function and whether full value is being obtained in return for an expenditure approaching £5,000,000 each year In his annual review of the service for 1933,[1] Sir GEORGE NEWMAN gives his reasons for the belief that it has justified itself The service was designed, as circulars from the Board of Education said in 1907–08, to improve the health conditions, both personal and in regard to environment, 'of the children of the nation and to secure the physical improvement, and, as a natural corollary, the mental and moral improvement, of coming generations Among its immediate results were abolition of chlorosis, reduction of ringworm to negligible incidence, prevention of blindness, eradication of pediculosis corporis, reduction of the ascertained rate of malnutrition from 10 or 20 per cent to 1 per cent, diminution of heart disease, rickets, and tuberculosis, and a general improvement in the physique of school children It rapidly determined the real state of health and physical fitness of the school-children, knowledge for the lack of which social reformers had been unable to formulate schemes for their welfare, and from this knowledge followed adaptations of education to the needs of the individual child More remotely it has confirmed the existence of widespread damage to the health of children reaching school age *and formed* the touchstone for plans of amelioration both for them and for adolescents who have left school and lost its benefits without entitlement to those of national health insurance It has created standards of nutrition, fostered school feeding, open-air education, nursery schools, education of the mentally defective and abnormal, provision for the rheumatic and the crippled and, above all, has pointed from the beginning and throughout its existence to the importance of the early and obscure manifestations of disease No one who was in close touch with child life before the year 1908 will controvert the claim that physique has vastly improved or that the school medical service has been the spearhead of attack on the physical unfitness which formerly prevailed No doubt the advance of medical knowledge and social enlightenment would have brought about some improvement in any case during the last 25 years, but it would have been less complete without the concentration that an organised service makes possible

What of the future? Is the school medical service static, as some of its officers complain? Has it shot its bolt? Is it engrossed with the correction of minor defects and lacking in vision? Sir GEORGE, while he does not admit any of the criticisms implied in such questions, points the way along which the service should travel There is still need, he says, for vision and imagination, and above all "there is need for much fuller concentration on the legitimate claims of the normal child, who constitutes 70 or 80 per cent of the school population We have devoted much labour, time, and public money to the treatment of the defective child Are we doing all that is practicable for the nutrition, physical education, nurture and health of the normal child? I fear we are not" *In other words,* we must not accept the "normality" of these 70 to 80 per cent as being finally established, but prove that our standards of physical fitness based on averages of past observations are not too low Turning to those passages which collate the findings of school medical officers as to under nutrition, a question of lively interest at the present time, we are faced at once with this question of standards Sir GEORGE fairly claims that the observations of 1340 school medical officers, assisted by 3338 nurses and a much larger body of school teachers, examining more than 3,000,000 children each year, are likely to afford a true picture of the state of nutrition of the school population "The determination of under-nutrition," he says, "and still more its degrees, is in any case one of exceptional difficulty In the *present state of* physiological knowledge there is no single test or standard of nutrition or of under-nutrition In practice the results are sound and relatively uniform" It is difficult to say whether the numerous pronouncements by school medical officers quoted in the report bear out this latter statement, because some of them seem to refer to cases of under-nutrition requiring treatment only, others to those requiring either treatment or "observation," while some appear to be concerned with all forms of disease or defect Moreover, the really distressed areas do not figure very largely in the quotations in this report, although some of these are dealt with elsewhere,[2] and the accounts of them convey, on the whole, the same cheerful conclusion that *malnutrition is* not rife The state of affairs is probably more clearly illuminated by a small investigation made by Dr J C SPENCE in Newcastle[3] It is true that this observer found a large proportion of the defective nutrition (using the term in a wide sense) among poor children to be due to antecedent disease, and this is a point which Sir GEORGE NEWMAN and the school medical officers constantly reiterate But we cannot dismiss lightly the suspicion that susceptibility to infective and other diseases may very well be a measure of under nutrition In many cases we know that it is While sympathy for those living on the necessarily meagre provision of unemployment benefit or public assistance must not be allowed to divert our minds from the truth, it is equally important to avoid complacency founded on observations which can be little more than clinical impressions. It is satisfactory however to find that malnourishment was detected in only 11·1 per 1000 children submitted to routine examination, as against 10·7 in 1932 and 11·2 in 1931, and that local authorities are alive to their responsibilities, as revealed by an increase in the number of children fed from 399,400 in 1932–33 to 414,800 in 1933–34. Sir George again emphasises the value of milk rations and defends the Board's policy of medical selection for free milk and meals, in spite of the difficulty in detecting early manifestations of under-nutrition which he has himself admitted in the passage quoted above.

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[1] The Health of the School Child Annual Report of the Chief Medical Officer of the Board of Education for the Year 1933 London: H.M. Stationery Office 1934 3s

[2] On the State of the Public Health, 1933 pp 2 9-13

[3] THE LANCET, 1934, i, 1179

The provision of milk and meals is real preventive work. The same applies to physical education and the teaching of hygiene, which are the subject of an interesting chapter. While we have encouraged and developed games among the youth of the country, we have not kept pace with other countries in the systematic pursuit of physical fitness The Board of Education has recently issued a revised syllabus of physical training, embodying the most modern ideas for coordinate development of the body and the senses. It has been received with much enthusiasm among school teachers, but in many areas its full use is hindered by a lack of trained organisers This is an aspect of physical betterment which should be more vigorously brought to the notice of education authorities by the Board. Similarly the teaching of hygiene is dealt with in an excellent Handbook of Suggestions on Health Education issued by the Board. There is no field for the propagation of enlightened ideas on public and personal health to compare with the school, but it is essential that the teaching should be sound and that as little as possible should have to be unlearned in later life. The handbook if followed and accompanied by hygienic conduct of the school administration is a safe guide Perhaps there is no greater reproach to the school medical service than its failure to prevent dental caries. Remedial work on a large scale is done, and unfortunately this is what the public wants. Over a million fillings were done in 1933, but more than 2,600,000 teeth were extracted, of which 452,406 were permanent. The real difficulty is one of prevention. Sir George discusses with appreciation the work of Mrs May Mellanby, D Sc , but finds it impossible to dismiss the relevance of oral hygiene and the use of detergent foods.

The school medical service ought to be, to a certain extent, self-destructive. Like other branches of preventive medicine, it should blaze the trail and hand over the simple operations of hygiene to non-professional workers, just as water-supplies, sewage disposal, and the mechanics of ventilation have passed out of medical hands. But it should be in touch with new discovery and finding new fields of endeavour for itself. If it keeps this ideal before it, there is no danger of its becoming static.

THE ANÆMIAS REVIEWED

Just when the anæmias are being differentiated and pigeon-holed, in the hope of fitting each with an appropriate specific therapy, those who are chiefly responsible for the ætiological classification on which therapy is based bring disturbing news. True, disturbance always precedes progress, but here it also destroys the growing conception of a group of blood diseases each caused by a definite deficiency and amenable to treatment only by supply of the defective factor in appropriate form and quantity. It is to the group of anæmias due to a shortage of efficient hæmopoietic factors that special attention has been directed in London this week Prof. Minot addressed a special meeting of the Royal Society of Medicine on some aspects of anæmia (see p. 1281), while the section of comparative medicine held a discussion on nutritional anæmias occurring in both man and domestic animals, opened by Dr. J B. Orr and Dr. Janet Vaughan. Though the subject was attacked from different aspects a common leit-motif emerged —that the missing hæmopoietic principle is not necessarily the one which seemed clearly incriminated following the remarkable results of early therapeutic trials, and that it is probably rare in practice to find a simple deficiency of any one factor. "Bush sickness" or enzootic marasmus, for example, a disease characterised by severe anæmia and progressive emaciation, has long been known to be relieved by iron in massive doses Dr. Orr pointed out, however, that Filmer and Underwood have recently proved[1] that the anæmia is not due to an iron deficiency. It is readily cured by an iron-free filtrate of limonite, and at autopsy the organs of affected animals are found to be more heavily laden with iron than the organs of normal animals. The fact that the livers of the diseased animals have not lower iron concentrations than the livers of healthy animals indicates that there has been no difficulty in absorbing sufficient iron from the food; while the large accumulations would suggest further that the difficulty has been one of utilising the iron stored in the liver. Filmer and Underwood suggest therefore that the anæmia is due to absence from the food of some factor necessary for the utilisation of iron in hæmoglobin production, a substance which is present as an impurity in iron salts, and contained in limonite, though at present unidentified. Prof. Minot described a series of experiments he had recently carried out in association with Dr. A. J. Patek which also suggest that iron-deficiency anæmias are not necessarily as simple as they appear. These experiments show that both bile-pigments and purified chlorophyll, though inactive when given alone, will enhance the potency of suboptimal doses of iron in idiopathic hypochromic anæmia. Certain pigments would appear to be essential to the utilisation of iron by the body. The mechanism involved is at present unknown It is possible

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[1] Filmer, J F. Australian Veterinary Jour, 1933, ix., 163 Filmer, J F, and Underwood, E. J · Ibid, 1934, x., 83

nstance that the value of spinach as a hæmo-
ic substance is not so much due to its iron
s pigment content

Addisonian pernicious anæmia also there is
h evidence that at least a dual deficiency may
resent During maintenance treatment more
factory hæmatological and clinical results are
ined, in many cases, when iron is given as well
ver extract The red cell count can, in such
ents, be kept well above 5,000,000 per c mm
n both drugs are given, while it is sometimes
cult to raise it above 4,500,000 per c.mm
iver alone The difference may appear insigni-
nt but there is ample evidence that nervous
em lesions are far less likely to result when
higher count is present The clinical improve-
t in these patients is, as Dr VAUGHAN insisted,
more striking than the rise in red cells Again,
ick men and sick animals, as opposed to experi-
ntal animals, it is not unusual to find other
iciency symptoms associated with anæmia, such
wasting, skin lesions, koilonychia, glossitis
eagerness to treat the anæmia other conditions
st not be forgotten, as Prof MINOT said in
ncluding his address, "it has to be recognised
at science is unstable, art uncertain, but that
e sick individual will always remain the centre
the picture" Though one deficiency may
minate the clinical picture it is essential to
member that one drug alone will not necessarily
oduce a cure, also that any drug used in a
ficiency disease will only exert an optimum
tion when given together with an adequate and
ell balanced diet The prevention of the common
eficiency diseases, among them anæmia, is as
uch an economic as a medical problem to-day,
nce the basis of all treatment must be an adequate
ood supply

NON-UNION IN FRACTURES

THE healing of a broken bone is a local process to a surprising extent it is independent of general metabolism and uninfluenced by general disease This is true even when the fracture is the direct outcome of a general metabolic disturbance No more striking instance could be cited than the case described by Dr C RAY MURRAY, of Philadelphia, in an address this year to the American Medical Association[1] After gastro-enterostomy the patient developed a gastro colic fistula which prevented absorption of calcium In these circumstances the calcium and phosphorus content of the blood was maintained at a normal level by progressive osteoporosis, and this led to the patient's readmission to hospital suffering from multiple spontaneous fractures Yet in spite of the advanced osteoporosis all the fractures healed with abundant callus Fractures in the disease known as fragilitas ossium show the same tendency to unite Old age, arterio sclerosis, and the like have been blamed for the non-union of fractures of the neck of the femur, but it has to be remembered that simultaneous fractures elsewhere in the same patient often unite without difficulty MURRAY states as a basic principle that "variations in the character and amount of the healing process are dependent on factors limited to the region affected" He also considers it certain that delayed union or non-union is due to failure in the deposition of calcium in the connective tissues The essential processes in the healing of a fracture are development of an actively growing granulation tissue between and around the bone ends, and calcium deposition in this tissue If these two parts of the reparative process take place normally, ultimate union is assured—though of course there may be malunion or angulation due to inefficient protection of the limb, or incomplete reduction

Certain facts about the early processes in the healing of bone have been clearly established For example, the initial traumatic hæmatoma plays a useful part, therefore sponging out the blood clot definitely delays union Stripping up the periosteum leads to a more abundant formation of callus Granulation tissue will not grow across a fluid medium, nor will it grow at right angles to muscle-fibres, hence transverse interposition of muscle and encysting of the hæmatoma are insuperable barriers to the formation of callus Local necrosis in its extreme degrees—as may be caused by crushing—destroys the tissues which take part in healing and interferes with their blood-supply Where the bone-ends have become dense and eburnated the process of calcification may be delayed or even absent The calcium used in repair of bone is obtained by decalcification of the bone in the neighbourhood, and dense anæmic bone will not part with its calcium, moreover, frequent irrigation of a compound wound will remove the excess calcium and prevent its fixation It is obvious also that mechanical conditions have a big influence on the future history of the soft, partly calcified callus In the structure of this callus three connective tissues are represented—young fibroblasts, chondroid tissue, and amorphous bone With the parts at rest, with the ends of the fracture in at least approximate apposition, and in the presence of a local excess of calcium, the natural evolution of this tissue is into bone But continually recurring movement of a twisting and pulling type may lead to the formation of adult fibrous tissue, which is unossifiable, while limited movement of the shearing type, such as may occur in a fracture of the radius with an intact ulna, may produce a cartilaginous pseudarthrosis

Beyond the established facts there has also been much speculation The more recent papers on the subject tend to be mainly a restatement of the same facts in different terms, with a bias in favour of the biochemical, the histological, or the mechanical outlook In MURRAY's analysis of the causes of non-union, for example, it is obvious that he relates nearly all the factors to their effect on the hydrogen ion concentration of the local fluids For the freeing of the calcium from the bone-ends the reaction must, he says, be on the acid side, during the fixation process it must revert to the alkaline side Excessive tissue necrosis, and irrigation by such fluids as chlorinated soda, may interfere with the pH of the tissue fluids and thus with the calcification of the callus In the discussion following **Murray**'s paper Dr E. L **Compere**, of Chicago, pointed, on the other hand, to the living osteoblast as the factor of importance in osteogenesis in fractures, and quoted the experiments of J. A **Key**, who found that whereas grafts of unboiled bone would lead to bridging of osteo-periosteal gaps, bags of calcium salts or boiled bone failed to do so. According to Chicago teaching the biochemical factors act indirectly through the living bone-cell Other writers, again, prefer to lay stress on the local circulatory changes: hyperæmia causing decalcification of bone, and anæmia causing calcification. A process of dedifferentiation of the tissues in the neighbourhood of the fracture is described by R **Leriche** and A. **Policard**,[2] who regard it as the essential preliminary to repair. It is probably true, as they suggest, that further progress in our knowledge awaits the discovery of some satisfactory method of studying, in conjunction, the histological and physico-chemical processes involved in osteogenesis, especially at a fracture site

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[1] Arch of Surg, September 1934 p 446

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[2] Physiology of Bone, Paris, 1926

ANNOTATIONS

CRITICISM OF THE MATERNITY SERVICE

On another page we print at length the report of two inspectors of the Ministry of Health into the circumstances of the death of Mrs Taylor on May 14th at the Crumpsall Hospital, Manchester, a few hours after she had been removed from St. Mary's Hospital, Whitworth-street, where her baby had just been born The report, while calculated to satisfy all concerned that Mrs Taylor's death was not due to want of efficient attention, makes suggestions for the avoidance of similar incidents in the future which may have interest for the maternity service in other parts of the country. In concluding their report the inspectors recognise that the public interest and anxiety aroused by the death of Mrs Taylor were an expression of the desire for efficiency and humanity in the administration of hospital services But they insist that this interest should not be divorced from a corresponding responsibility to bring to bear an informed and balanced attitude of mind in dealing with the problems presented. Rumours are apt to spread, tending ever to become more sensational, fallacious deductions and allegations are too readily assumed and accepted. A grave disservice is done to all women by those who add to a mother's anxieties and apprehensions respecting childbirth and increase needlessly the heavy responsibility inevitably borne by all engaged in the practice of midwifery.

ISOLATION OF A HUMAN INFLUENZA VIRUS IN AMERICA

In August and September of this year an epidemic of influenza occurred in Porto Rico. Specimens of sputum from typical cases were sent in 50 per cent. glycerin to Dr Thomas Francis at the Hospital of the Rockefeller Institute, New York City. Francis[1] inoculated three of these sputa separately into ferrets under ether anæsthesia All the ferrets showed a sharp rise of temperature in 48 hours From one of them virus was recovered and has since been maintained by serial passage in ferrets In the sixth passage-animal areas of consolidation were found in the lungs, and similar lesions have been constantly present in ferrets of later passages In the course of the work one of Francis's laboratory assistants developed symptoms of influenza, and virus was recovered from his nasopharyngeal washings The results confirm those of Smith, Andrewes, and Laidlaw,[2] on the susceptibility of ferrets to human influenza, and they are important in that they provide the first confirmation of their results from another laboratory. But in so far as his ferrets developed pneumonia Francis's experience is different from that of the British workers and resembles that of Shope[3] with ferrets infected with swine influenza virus

Independently of the recent investigations in this country[4] Francis found that mice could be infected with influenza virus given intranasally under ether anæsthesia He was able to do this with virus which had been passed in series through only two ferrets, but has not yet recorded that mice can be infected directly from man The pulmonary lesions in Francis's mice were like those described in these animals by Andrewes, Laidlaw, and Smith,[4] but differed in their greater severity, many mice dying within 48 hours of infection Apparently one strain of mice in New York, the Swiss mice, were more susceptible than another. It appears then, that the American virus attacks both ferrets and mice with greater virulence than does the virus isolated in England last year; this may depend on a real difference between the two viruses or upon differing susceptibility of the experimental animals used in the two laboratories It has been in the past a matter for conjecture whether the liability of man to many attacks of influenza depends upon the transient nature of his immunity or on the existence of different serological races of the infective agent It will therefore be a matter of peculiar interest to learn whether or not the English and American strains of virus are immunologically identical

DAMAGES FOR DIMINISHED EXPECTATION OF LIFE

It will strike the public as odd that the law courts should still be disputing whether a man is entitled to damages if another person's negligence shortens his prospect of living Until lately there was a most unreasonable rule of English law that, although in a criminal court the Crown could proceed against a murderer for felony, in a civil court the death of a human being could not be the basis of a claim for damages. In other words it was cheaper for a negligent motorist to kill his pedestrian than to cause him some non-fatal injury In the recent case of Flint v. Lovell the plaintiff claimed damages because the day of his death had been brought nearer He was a man of ordinary reasonable health and strength for his 69 years of age He complained that, owing to the injuries he had received through the defendant's negligence, he had suffered severe bodily pain and mental disquietude through the prospect of an early death; "what might have been an eight to ten years' pleasant life in which he could have carried on his normal activities had," in Lord Justice Greer's phrase, "been converted into a precarious tenure not likely to exceed 12 months" As Mr Justice Acton had said, in trying the claim, Mr Flint had "lost the prospect of an enjoyable, vigorous, and happy old age" He had now got the certainty of additional expense for medical treatment and nursing Mr Justice Acton assessed the damage at £4000 (with an extra £400 for special expenditure) and the Court of Appeal upheld the award Lord Justice Greer and Lord Justice Slesser agreed that the amount, though generous, was not so excessive as to justify reversing Mr Justice Acton's finding, Lord Justice Roche, in a minority judgment, thought £3000 would have been enough The Court of Appeal has now established the principle that, in estimating damages, the courts may take into account the reasonable certainty that the plaintiff's life has been substantially shortened by the defendant's negligence

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[1] Francis, T Science, 1934, lxxx, 457.

[2] Smith, W, Andrewes, C H., and Laidlaw, P P THE LANCET, 1933, ii, 66.

[3] Shope, R E Jour Exp Med, 1934, lx., 49

[4] Andrewes, C H, Laidlaw, P P, and Smith, W THE LANCET, Oct 20th, 1934, p 859.

INFANT MORTALITY IN THE ANTIPODES

For each quinquennium from 1871–75 to 1926–30 the rate of infant mortality in Australia has been appreciably below the level of the rate in England and Wales. In the earliest quinquennium the rate in England and Wales was 153 deaths per 1000 live births, while in Australia it was only 119, in 1926–30 it was 68 in England and Wales and only 52 in Australia New Zealand, which so far holds the "world's record" in this characteristic, shows rates still lower, only 37 per 1000 in 1926–30 In the last two or three years even these figures have been surpassed in various States For instance, the Statistical Register of the State of South Australia[1] shows a rate of 36 per 1000 live births in 1931, 37 in 1932, and 32 in 1933, the last being only 1 per 1000 in excess of the New Zealand "record" rate in 1932 Such figures suggest that the rates of England and Wales may still be capable of a large degree of improvement So far the trend has been curiously alike in places so far removed in space and conditions of life. In Australia, as a whole, there was, just as in England and Wales, very little change in the rate until the opening of the twentieth century, since when, in both, a continuous and rapid decline has been registered[2] The figures for South Australia, on the other hand, show a nearly continuous fall since 1871–75 The improvement, as in England and Wales, has in the main been confined to the ages over one month Under one month the mean rate in South Australia in 1900–04 was 33 and in 1925–29 27, a decline of approximately 20 per cent, at ages 1–12 months the corresponding rates were 59 and 19, a decline of nearly 70 per cent For the great majority of those dying under one month of age prenatal causes were held to be responsible On the other hand, a decline of 20 per cent shows that improvement is not impossible as has sometimes been suggested, even at this early stage of life The England and Wales rate under one month was 32 in 1932, compared with 23 in South Australia A much greater scope for improvement, however exists at ages over one month for the rate in England and Wales in 1932 was 33 and in South Australia only 11 in 1932 and 10 in 1933

The decline in deaths from diarrhœal diseases has been peculiarly striking in South Australia In 1910–14 the annual average number of deaths attributed to diarrhœa and enteritis at ages under one year was, approximately, 210, in 1920–24 160, in 1925–29 only 56, and in 1930–33 as few as 27 Until the last period the births were approximately stationary, and calculation gives the following rates per 1000 births for these causes 18, 14, 5, 3 In 1930–33 the rate was only one sixth of that recorded 20 years previously. It is, perhaps, Utopian to hope that such low rates of infant mortality can be achieved in the highly industrialised community of England and Wales, but the comparison, at least, shows that there is no reason to rest content with the success at present attained in this country

EXCISION OF THE THORACIC ŒSOPHAGUS FOR CARCINOMA

EXACTLY a year ago[1] we recorded a case of carcinoma of the middle of the œsophagus in which Prof. Grey Turner had removed the whole of the thoracic portion of the œsophagus and had fashioned a new gullet from the skin of the anterior chest wall and an isolated loop of jejunum This operation was performed on April 28th, 1933, and the patient survived for 19 months until Nov 24th of this year We are indebted to Prof Grey Turner for the following account of his recent history.

The patient has been very comfortable since the completion of the operation, and has been able to get about and to enjoy life He could swallow food of any sort with ease, but he preferred to have it warm A film was taken on two occasions, when he was invited to eat a high tea at the Newcastle Royal Infirmary, in order to provide a record of this unusual case Normally he took the ordinary household meals with his family His last meal in the day was taken at 6 P.M., three hours before he went to bed, because if he took food just before lying down there was a tendency to slight regurgitation He was, however, able to swallow in the recumbent position or lying on his side, thus proving that the propulsive mechanism depended almost entirely on the pharyngeal muscles

As recently as Oct 26th he was able to travel from Newcastle by bus and appeared to be in good health At that time he retained the 28 lb he had gained in weight and made no complaint But a week before death he had some precordial pain accompanied by vomiting, and after this he rapidly went downhill, becoming generally œdematous and exhibiting signs of uræmia An examination after death disclosed chronic nephritis with secondary cardiac hypertrophy and dilatation and diffusely adherent pericardium and aortitis There was no obvious recurrence of the malignant disease, but a doubtful area at the cardiac end of the stomach and two of the mediastinal glands are being subjected to careful microscopic investigation as is also the histology of the new œsophagus

The first successful excision of the cancerous portion of an œsophagus was performed by Czerny in 1877 That survival for a considerable period after radical removal of a growth in this situation should still be a nine days' wonder is in itself sufficient to show how little the surgery of malignant disease of the œsophagus has advanced during a period in which much has been achieved in other parts of the body This lack of success is attributable neither to lack of enterprise on the part of surgeons nor to the malignancy of the growth, but to the peculiar position and function of the organ attacked As a rule the disease, if untreated, leads to death from inanition while the growth is still localised to the œsophagus, but the most carefully planned operation may fail because of the close relationship of the growth to great blood vessels, to the bronchi and to the pleural membranes, damage to any of which may prove fatal. The procedure advocated and successfully practised by Prof. Grey Turner is excision of the whole thoracic œsophagus by what he has designated the "pull-through" method, the organ being freed from its surroundings through abdominal and cervical incisions, cut through at the top and drawn out through the diaphragm. This, however, is only one step, and not the most difficult one, in the multiple stage operation which has to be undertaken to enable the patient to swallow again. At the first stage a gastrostomy must be provided; then the "pull-through" operation is carried out; thirdly, the skin tube from clavicle to costal margin must be fashioned; later still the cervical œsophagus has to be united to the upper end of the skin tube, and finally the lower end of the skin tube has to be joined to the stomach. These stages may occupy a period of rather over six months, and the whole procedure calls for supreme courage on the part of the patient and the surgeon, and the latter also requires much ingenuity and resource to overcome many unforeseen complications. On many occasions the operation has had to be abandoned at an early stage, and some of the patients have succumbed to complications after the second stage, excision of the œsophagus, has been completed. The fact that Prof. Grey Turner has been able to carry the whole procedure through successfully and to have kept the patient alive for 19 months after œsophagectomy, in spite of what would have been to most surgeons most discouraging earlier experiences, must command warm admiration. It is inevitable that the question should arise whether the end has justified the means. We know that if gastrostomy is properly performed at the right time a patient suffering from carcinoma of the œsophagus is likely to live in comparative comfort for six months, and survival for a longer period, though unusual, is not unknown. Apart, however, from mere prolongation of life, a man suffering from œsophageal obstruction is enormously benefited by an operation which enables him to swallow. This improvement is seen particularly in cases of simple stricture, in which the body-weight may be maintained after gastrostomy, but steadily increases when a new œsophagus has been made. It is only to be expected that the psychological effect of the enjoyment of eating and swallowing food once again, and the freedom from the necessity of spitting out the saliva which cannot be swallowed, must be of value. This remarkable case clearly represents a triumph for surgery at a time when its claims in the treatment of malignant disease are being challenged by irradiation.

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[1] Part II Population and Vital, 1933–34

[2] Infantile Mortality in Australia 1906–30 by H J [illegible] Jour Roy Stat Soc, 193[illegible] xcv [illegible]

[1] THE LANCET 1933 ii, 1315

"SYMPATHICOTHERAPY"

THOSE endonasal manœuvres, of which the purpose is to obtain reflex effects by stimulation, or sometimes by analgesia, of various parts of the nasal mucous membrane have recently been the subject of discussion especially in France, and the *Vie Médicale* has asked a large number of larnygologists for opinions on their value. Replies were received from 31 specialists, many well known by name in this country, which are printed at length, and which are well summarised by Dr P.-E. Morhardt.[1] As might be expected in so controversial a subject, the replies differ widely in almost every particular. The methods employed include the galvanocautery, and applications of caustics, local anæsthetics, and hot or compressed air to the inferior and middle turbinals, the septum, and the region of the spheno-palatine ganglion. The diseases in which benefit has been claimed range from "spasmodic" coryza, hay-fever, and asthma, through affections of neighbouring regions such as pharyngeal cough and hoarseness, headaches and facial neuralgia, tinnitus and vertigo, to diseases of the eye and of remoter organs, bradycardia, tachycardia, angina pectoris, dysmenorrhœa, and even to the ataxy of tabes, hemiplegia, and infantile paralysis. It is not surprising that many correspondents attribute such results entirely to suggestion, and most authorities in England will doubtless share this view so far as the effect on distant organs is concerned. There remains, however, the group of affections which includes vasomotor rhinorrhœa, paroxysmal sneezing, hay-fever, and some cases of asthma, in which there is a consensus of opinion that this form of treatment gives good results in a considerable proportion of cases. It is noteworthy that most of the correspondents protest against the damage done by commercial exploitation to a form of treatment which can give excellent results in honest and capable hands. Incidentally, though this method of treatment is called "sympathicothérapie," reflex therapy would be a better term, for it is impossible to say what fibres of the trigeminal, the sympathetic, or the parasympathetic are involved in the reflexes concerned.

INTRAVENOUS INJECTION OF ALCOHOL

SOME time ago Dr. Anastase Landau, of Warsaw, in collaboration with Drs B. and J. Glass and others, described[1] the treatment of suppurative pulmonary diseases with intravenous injections of 33 per cent. alcohol. We understand from our Polish correspondent that the success of this treatment has been sufficient to attract attention not only in France but also in Italy and Rumania. The form of alcohol now used is a mixture of 20 parts of absolute alcohol with 80 parts of sterile normal saline, giving what is practically a 20 per cent. solution. Of this an intravenous injection of 30–50 c.cm. is given on successive days up to 20 days in all, or until the desired effect has been achieved. The kind of case Dr. Landau considers best suited for the treatment is post-influenzal broncho-pneumonia with miliary abscesses and the simple pulmonary abscess following lobar pneumonia. In the latter the outcome is good in 75–80 per cent. of the cases; in the former almost in every case. After a few injections the temperature falls to normal, the sputum becomes less purulent and less abundant from day to day. Striking results are obtained occasionally in gangrenous broncho-pneumonia. On the other hand, in bronchiectasis the results are less promising, although the treatment has its place in the exacerbations which occur from time to time. Dr. Landau's explanation of the mechanism of the treatment is the affinity of the pulmonary tissue or the pyogenic flora for the circulating alcohol which reaches the lung without passing through the liver. It is on this point that he lays great stress. Given by the alimentary route alcohol is held up by the liver often to the detriment of its own structure. As a further precaution Dr. Landau recommends the injection of 5 to 10 units of insulin each day that the alcohol is given. The same point is made in our correspondence columns by Dr. Cooke, who suggests the injection of alcohol into the median basilic vein at the onset of labour as a method of shortening and rendering painless econd stage He also prefers the intravenous oral route by reason of avoiding the action of ol on the liver, which, as he remarks, may in ancy be specially sensitive to any form of Readers may recall that this form of intra-is anæsthesia is not a new thing, for it goes back st to the advocacy of Dr M G Marin, who, years of experimental anæsthesia on animals, thetised some hundreds of patients at the ry Hospital, Mexico City, successfully in this for various operations[2] An opportunity was to anæsthetists in London of seeing Dr Marin's od put to the test[3], some of those who were nt at the demonstration may have since made of these injections, although there is nothing to est that alcohol anæsthesia will establish itself method of choice for routine work

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[1] Vie Médicale, Oct. 25th, 1934, p. 897.

[1] Presse Médicale, 1931, xxxix, 523

HE MORTALITY FROM HÆMATEMESIS

N p 1271 Dr T F Hellier adds another to the y papers on hæmatemesis that have recently eared in our own columns and elsewhere Two s ago Dr Ernest Bulmer[4] extended his analysis he cases admitted to the Birmingham General pital, and concluded that during the period 2–31 the mortality of hæmatemesis due to peptic r was 10 per cent At the same time Dr W E esman[5] found a mortality of 25 per cent among ients admitted to St Thomas's Hospital for gross natemesis or melæna In April of this year R S Aitken[6] contributed figures from the don Hospital showing a mortality of 11 per cent imilar cases, and Drs. G Burger and S J Hartfall[7] covered 22 6 per cent of fatalities in cases admitted Guy's for severe hæmatemesis due to peptic ulcer Hellier's results from Leeds give a 12 per cent rtality among 303 cases "presenting the cardinal nptom of hæmatemesis of such severity as to quire hospital treatment" It would serve no eful purpose to attempt a comparison of these ies, not only because the methods of their collection d presentation differ from paper to paper but also cause the conditions under which different hospitals rk, the severity of the cases deemed suitable for mission and the details of treatment must vary dely One thing, however, is common to all five ports—a note of dissatisfaction Even those authors ho present their figures without any comment imply at the figures tell their own tale, and the tale is at the mortality from hæmatemesis is too high urger and Hartfall refer to the earlier statistics from uy's Hospital, collected by Conybeare in which the atio of fatal hæmorrhages from peptic ulcer demon-rated post mortem to total admissions for hæmatemesis or melæna from ulcer, was found to be only or 3 per cent These figures and others from abroad ere quoted by Dr A F Hurst in support of the ew that fatal hæmorrhage from peptic ulcer is are—a view which strongly colours many of the esent-day text books "Rare" is a vague word ut it now appears that fatal hæmatemesis is by no eans so rare as to be negligible Critical eyes are therefore turned on the methods used in its treatment, and it is significant that this aspect of the subject ccupies more than half of Dr Charles Bolton's ost graduate lecture on hæmatemesis which appeared our issue of Oct 27th The mortality figures we ave quoted make it clear that the time-honoured medical measures—absolute rest, morphia, and starvation—are not adequate, or else they are not being adequately applied Chiesman turns tentatively again towards surgery, while Aitken urges a greater use of repeated transfusion of blood The Royal Society of Medicine discussion on the subject, reported in these columns last March,[8] showed a distressing lack of agreement on the proper use of the methods of treatment that are available No statistics yet published are extensive enough, or rigidly enough controlled, to give answers to the questions involved, and it seems unlikely that the answers ever will come from general hospital statistics, but if the recently awakened anxiety over the hæmatemesis mortality brings about a closer study and more careful recording of individual cases, especially of the severer ones whether fatal or not, there is hope that the problems of treatment will thereby come nearer to solution The present situation is no great credit to medicine

PLEURISY AS A PRECURSOR OF PHTHISIS

SINCE "idiopathic" pleurisy has come to be regarded as a synonym of tuberculous pleurisy, great interest has attached to the prognosis In 1910 Allard and Köster showed that in Sweden about half these patients developed pulmonary signs later In 1927 Olaf Scheel, of Oslo, in a study of 812 patients treated for pleurisy in the ten-year period 1916–1925, and kept under observation for one to ten years, found that only 22 per cent of them subsequently developed tuberculosis, in the lungs as a rule The most recent Scandinavian study of this problem is still more encouraging—so much so that the unwary may be tempted to doubt its very existence At the Nakkebölle Fjord Sanatorium in Denmark, Dr O Helms[9] has adopted the excellent system of keeping in touch with his ex patients by means of questionnaires which he sends them during the first five years after discharge In the eight year period 1924–1931 there were 150 patients, all women, who were treated for pleurisy alone, the physical examination of the lungs, the X rays, and sputum tests showing no signs of tuberculosis Five of the cases were bilateral, 90 were right-sided, and 60 were left sided In 50 cases the diagnosis of a pleural effusion had been confirmed by exploratory puncture before admission to the sanatorium, where all the patients received light baths and orthodox treatment Its average duration was about four months, and all the patients were in good health on discharge Two years later only 3 could not be traced Of the remaining 147 2 had died, 5 had been readmitted to the sanatorium, and 3 were unfit for work, the disability in one of these cases not being due to tuberculosis. After subtraction of these 10 there remained 137 who were fit for work this fitness being only partial in 14 cases From these figures, Dr Helms calculates that barely 7 per cent fell ill or died within the first two years which are supposed to be the most critical To ascertain if matters became worse after a longer observation period, he studied by themselves 80 patients whose discharge from the sanatorium dated back more than five years Three had died in the interval and 1 had been readmitted the remaining 76 were still fit for work, such fitness being partial only in 7 cases It will thus be seen that, so far from being worse the cases kept under observation for more than five years showed a cleaner bill of health than those observed for only two years after discharge Dr Helms remarks that these findings should profoundly modify our prognosis of pleurisy, even though we continue to regard it as a manifestation of tuberculosis In the past he has considered pleurisy alone as an indication for sanatorium treatment In the future he intends to be more discriminative, for sanatorium treatment implies not only the loss of so many working days, but also an embarrassing stigma On the other hand, Dr Helms's findings may, as he himself admits, be quoted in favour of sanatorium treatment, without which many of these patients might have developed pulmonary disease The glaring discrepancy between the findings of Allard and Koster in 1910 and of Helms in 1934 may be explained, in part at least, by the relative inadequacy of the earlier X ray examinations, as a result of which several cases with lungs already infected were probably included.

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[2] THE LANCET 19[illegible] i 1[illegible]
[3] Ibid i 1[illegible]
[4] Ibid 193[illegible], ii, 720
[5] Ibid 193[illegible] ii 7[illegible]
[6] Ibid 1934 i [illegible]
[7] Guy's Hosp Rep 1934, lxxxiv, 19[illegible]

[8] THE LANCET 1934 i [illegible]
[9] Nord med Tidskr Oct [illegible], 1934, p. 1[illegible]

THE LEAGUE OF NATIONS AND NARCOTICS

THE supervisory body set up under the Limitation Convention of Dangerous Drugs (1931) have at their recent meeting dealt with estimates from 73 countries and 117 territories of the amounts of the several narcotics required during the year 1935 In cases in which the necessary estimates were not supplied these have been determined by the supervisory body itself. The totals will presumably fall within the world requirements laid down by the League of Nations—viz, morphine 9 tons, heroin 2 tons, and cocaine 5½ tons The League has issued a special supplement in order to give general publicity to "the great success achieved by the League in this sphere of its activities" The use and abuse of opium itself, particularly of smoking opium, as well as of the coca leaf and Indian hemp, are not however dealt with in this document. Reference is made to some 40 tons of dangerous drugs manufactured in some 60 licensed factories; about one-half of "the basic drugs" presumably relate to preparations which are at present outside the provisions of the several conventions The actual figures finally allocated to each country for the several scheduled drugs will be published on Dec 15th.

In the League's *pièce justificative* just issued it is claimed that by means of the several opium conventions "a powerful instrument of international government" has been forged, "embodying a bold conception without precedent in the history of international relations and international law" and indeed that results show what the League might do in other spheres of international life—e g, the trade in and manufacture of arms While the licit production of narcotics would thus appear to be fairly under control, the full gravity of the multiplication of clandestine factories is emphasised, the same publication sounds a serious note of warning against undue optimism as to the future, since there is grave danger that clandestine factories might flood the world with an even greater quantity of illicit drugs than at any time in the past. The imports of acetic anhydride (suspected to be destined for the manufacture of heroin) are causing much concern, and it is stated that the quantities imported each year through Shanghai would alone suffice for the manufacture of 18 tons of heroin, while the legitimate requirements of the world of that drug do not exceed 2 tons The closely related problem of limitation of production of raw opium and the coca shrub are, it is recalled, still engaging the attention of the Opium Advisory Committee with a view to drafting a new convention so as to prevent these raw materials from getting into the hands of the trafficker.

TUBERCULOSIS OF VOLUNTARY MUSCLE

ALTHOUGH it is not unusual for muscle to become infected from a contiguous tuberculous focus, with *fistula formation*, *muscular tuberculosis* in the sense of a metastatic hæmatogenous infection, secondary to a tuberculous infection elsewhere in the body, is rare, whilst primary tuberculosis of muscle must be exceedingly rare, if indeed it occurs at all In reporting[1] a case of tuberculosis of the gastrocnemius muscle, Dr. H Milch states that muscular tuberculosis is commonest between the ages of 17 and 24, that males are more frequently affected than females, that muscles of the extremities are more often involved than trunk muscles, and that injuries and excessive use seem to predispose to its development. Histologically the disease may be either of the typical giant-cell variety or of the endotheloid type, the interstitial connective tissue is first affected, the muscle tissue being only secondarily involved. From a study of the literature, Dr. Milch distinguishes three main clinical types: (1) the tuberculous nodule; (2) the cold abscess, (3) the sclerosing interstitial myositis; and to these he adds, (4) a fungous type, and (5) a pseudoneoplastic type, observed in the abdominal muscles The disease is insidious, pain and fever being seldom found, while the general health remains unimpaired. According to Ranke, in 1922 only 55 well-authenticated cases of muscular tuberculosis, produced in ways other than by direct extension, had been recorded. A few more isolated cases have been reported since.

A LECTURE on Dosage above the Pharmacopœial Maximum will be delivered by Dr. A F Hurst at an evening meeting of the Pharmaceutical Society of Great Britain (17, Bloomsbury-square, London, W.C) on Dec 11th, at 8 30 P M

THE third Informal Conference of Cancer Research Workers, organised by the British Empire Cancer Campaign, will be held on Wednesday and Thursday, Dec 12th and 13th, at the rooms of the Medical Society of London, Chandos-street, W An informal dinner will be held at the Langham Hotel on the evening of Wednesday, Dec. 12th. Further information may be had on application to Mr Cecil Rowntree or Dr. R. G Canti at 12, Grosvenor-crescent, S.W.1.

LORD RIDDELL, who died on Wednesday in his seventieth year, was keenly interested in medical affairs and a welcome guest at professional gatherings He had made himself something of an authority on the law and ethics of medical confidence and for some years he held office as president of the Medico-Legal Society. To the Royal Free Hospital, whose president he was for nearly ten years, he gave freely both of work and money, and at the time of his death he was also chairman of the London Voluntary Hospitals Committee Among medical bodies the British College of Obstetricians owe him an especial debt, for he provided them with the house they occupy in London.

THE death of MR. JAMES PENDEREL-BRODHURST at the age of 75, following an operation, will cause wide regret in the circle of those who knew him as leader-writer, historian of King Edward VII's time, and editor for many years of the *Guardian* Our own regret is more personal, for Mr Penderel-Brodhurst was an authority on hospitals and everything to do with them When he left the *Hospital* he continued his work for the voluntary hospital principle in the form of contributions to our columns.

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[1] Amer. Jour. Med Sci, 1934, clxxxviii., 410.

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXX.—PROGNOSIS IN INFECTION OF THE URINARY TRACT BY THE COLON BACILLUS

In any attempt to foretell the issue of an infection of the urinary tract by the colon bacillus we have to search for answers to these questions How often does an acute infection become chronic? Where the infection had become chronic, in how many patients did the urine become permanently sterile before the introduction of the ketogenic diet, and in how many since the use of the diet? Can failure be predicted before the diet is begun? Is failure invariably due to faulty drainage in the urinary tract? Even if the urine becomes sterile, are relapses common? Prof Spiridion Oeconomos, in a report presented to the Congress of the International Society of Urology held at Madrid in 1930, wrote "Dans la plupart des cas, l'infection coli bacillaire de l'appareil urinaire passe à la chronicité" Many will take a less sombre view of the patient's prospects, yet those with most experience of this particular infection are most guarded in prognosis On the other hand, Fuller and Colebrook (THE LANCET, 1933, ii, 735) record that of 54 women to whom a ketogenic diet was given for a urinary infection in the puerperium 24 had a sterile urine within 17 days Of the 24 successful cases 18 were infected by the colon bacillus or a nearly related organism, and two by the colon bacillus and the *Bacillus lactis aerogenes* "As soon as the fever and most acute symptoms had subsided the patients were dieted" The work published by Fuller and Colebrook was restricted to infections associated with pregnancy, and to the acute phase of these infections. Their results are in no way comparable to those obtained in a series not restricted to women, much less to women in whom the infection was a legacy of pregnancy, a series where the infection was no longer acute but had become established as a cause of chronic ill health It is significant in this connexion that in 48 women treated in 1932 for a urinary infection associated with pregnancy without the assistance of the ketogenic diet, Miss G H Dodds found the urine sterile in half the patients after six months.

But whatever may be the prospect of an acute infection clearing up it is not in question that when once the infection has become chronic the outlook is bleak "There is no cure for chronic cases," Bazy of Paris told the Congress referred to above, and allowing for that shade of emphasis which distends the truth in the spoken word it was the sober verdict of the Madrid Congress The mortality is low, but in a small minority the patient's resistance is gradually undermined, the febrile disturbances become more frequent, until at last uræmia or intercurrent disease puts an end to years of ill health At the autopsy multiple cortical abscesses will be found in the kidneys

Results of a Ketogenic Diet

Has the introduction of the ketogenic diet changed the outlook in the chronic phase of the infection? Few figures are yet available Those which are tell a tale In a communication to the section of Medicine at the last annual meeting of the British Medical Association Prof Murray Lyon said: "Tested on a group of chronic cases which had resisted all other forms of treatment this method proved successful in about one half the patients"

I have myself kept records of 100 consecutive cases dieted for a chronic infection of the urinary tract by the colon bacillus 32 were males, 68 females The duration of the infection varying from 30 years to six months, the minimum time that qualified for inclusion in the series, was not in itself a factor in prognosis In 88 the urine became sterile within a fortnight, in 12 the diet failed The history of these patients, all dieted in the past two years, is at present incomplete In 32 per cent of those who were treated more than a year ago there has been a recurrence of the infection. The frequency of relapses is disappointing, but the return of the colon bacillus was again successfully met by dieting, and it may be laid down that in the absence of any rational alternative the ketogenic diet has for the present replaced all other methods of treatment of a chronic infection of the urinary tract by this bacillus The influence of faulty drainage of the tract on the results of treatment will be discussed presently, but it may be affirmed that the prospects of a patient with such an infection are, in the absence of urinary obstruction, directly proportional to his or her ability to get the diet properly carried out Attention to detail has a full reward Two years ago (THE LANCET, 1932, ii, 960) I pointed out the need for the limitation of fluids and for the maintenance of ketosis, not only throughout the 24 hours, but also for a longer period than is necessary to sterilise the urine In practice these and like precautions are still commonly neglected My results were obtained in favourable circumstances, there were no hospital cases in the series, the majority of whom were dieted in nursing homes, and the remainder—a small minority—in their own homes; in all, the details of the dieting were under my control

Detection of Urinary Obstruction

Before the patient begins the diet the physician may be asked if an overhaul of the urinary tract is advisable He himself will welcome such an investigation If it reveals urinary obstruction it warns him that failure of the diet is probable, but so far as is known at present not inevitable It warns him too of the possibility of relapses If the patient will not submit to such an overhaul, then in the absence of any information particular to that patient the physician must fall back upon results in general He can only say that in 88 *per cent* the diet is successful

It is true that clinical examination alone may furnish the information he requires, evidence of a renal calculus or of enlargement of the prostate or kidney In 4 of my patients pain in one kidney obstinately recurring was the first evidence of a unilateral lesion But more often the physician is dependent on the surgeon for evidence of faulty drainage

The surgeon will fortify these conclusions He contends that a chronic infection of the urinary tract by the colon bacillus will not clear up if there is a surgical lesion causing retention of urine or ulceration of the tract He concludes that in any such chronic infection there should first be a thorough investigation to determine if there is a removable surgical condition responsible for the persistence of the infection

There is left the patient's point of view, which is sometimes forgotten For my own part I do not need to imagine his feelings; I recall them There is nothing in his daily routine which might assist him to emulate the surgeon in making light of these methods of investigation They remain displeasing to his mind and painful to his person He will ask why he should submit to such discomfort when he has just been told that in 88 per cent of those who diet the information is unnecessary

It is the physician's office to present the issues to the patient as from the Bench, and in a form which he can comprehend. If the patient belongs to the 12 per cent. who fail to respond to the diet, or even to the 32 per cent. who eventually relapse, he will have to submit to the overhaul, because when the diet has failed the discovery and correction of urinary obstruction are left as the only hopeful alternative. If he belongs to the majority who respond to the diet and do not relapse the investigations are unnecessary. The physician cannot say in advance into which category a patient will fall. The patient should have the facts placed before him: he must decide.

Measurement of Response to Diet

The sharp contrast between the results won by treatment of a chronic infection of the urinary tract before and after the introduction of the ketogenic diet leaves the physician in suspense until he knows if a particular patient will react to the diet. I have not been able to lend the precision of statistics to the effect on prognosis of involvement of the kidney or of different strains of the colon bacillus, and in particular to the influence of these factors on the response to the diet. Of the 100 cases in my series 68 were females and 32 males Of the 12 in whom the diet failed to sterilise the urine 8 were males and 4 females. Age has no obvious bearing on the results of dieting, save that renal inefficiency adds to the difficulties and that the frugal diet of the very old makes the ketogenic diet a burden they seldom can carry. Beyond these vague intimations based on age and sex the physician is driven back on statistics for his prognosis, when an obstructive lesion has not been excluded

Once the diet is begun the issue is not long in doubt. An intense ketosis, conveniently measured by the ferric chloride test and a pH in the neighbourhood of 5 are the two essentials of success.

These two tests tell us all we need to know of the patient's reaction to the diet. The ferric chloride test is usually negative for a day or two, but if the test is not strongly positive by the fourth or fifth day I have learnt to be anxious about the success of the treatment of that particular patient. Or the ketosis may develop satisfactorily, but the pH may never fall to the requisite figure: the patient may strictly adhere to the prescribed diet, and yet the pH obstinately remains nearer 6 than 5 The success of the diet is not assured with the development of an intense ketosis and a pH of approximately 5. Both tests may be satisfactory for the first week, at the end of which a sterile urine may be reported, and then in the second week some compensatory mechanism in the body comes into play, the pH creeps up, and the ketosis becomes less and less. What often happens is that while the evening ketosis remains fairly satisfactory, the morning ketosis is gradually lost. I have seen an intense ketosis at 8 P M, followed by a negative ferric chloride test at 8 A M. If the evening urine only is examined the result may be misleading

This secondary rise of the pH and failure of the ketosis may even imperil the success of the treatment. The cultures taken at the end of the second week may again show a moderate growth of *B coli*. It follows from this tendency to a dwindling response to the diet as times goes on that we must get our results quickly or not at all. The patient should be launched on the full ketogenic diet forthwith Three or four days should not be frittered away in the gradual increase of the fat content of the diet, as advocated in the American literature to avoid digestive disturbances The urine is usually sterile within a week or ten days after the beginning of the diet Patients can be warned at the outset that they will be on the diet for a minimum of two and a maximum of three weeks. It is seldom worth while persisting with the diet beyond that period. If we have failed then time will not bring success.

Relapses

In the thin literature devoted to the ketogenic diet I can find no mention of relapses—a singular silence on the very point which should arouse our concern, for this tendency to a recurrence of the infection fills the mind of the clinician who has much experience of the diet. Of my series of 100 cases 15 already have relapsed. This figure is plainly too low It is significant that if patients treated during the last 12 months are excluded, there is a sharp rise in the number who relapse, from 15 to 32 per cent Of those who relapsed 35 per cent were males

If the diet is relaxed when the urine is sterile in a certain number of patients *B coli* reappears in a few days; if the diet is continued for a week after the sterile report is received this does not happen I have no explanation to offer, but in my practice the diet is not changed for a week after the urine is sterile.

Most of those who relapse do so after some months of freedom. I am not yet able to say whether a surgical lesion of the urinary tract is invariably present in those patients who relapse If it is, it should be removed when that is possible If it is not, the physician may have to persuade these patients to go on the diet for a fortnight if they relapse, educating them to carry out the details of the diet as the diabetic is taught to control his own diet.

The liability to relapse should be put before the patient when the dieting is begun. He need not be discouraged. There are not many chronic infections for which we can promise a considerable measure of relief; there are still fewer in which we can say that the infection will be extirpated in the majority of patients within three weeks.

C. M. WILSON, M D., F R C P,
Physician to Out-patients, St. Mary's Hospital.

ROYAL NORTHERN HOSPITAL —For the year 1933 the total cost of maintaining this hospital was £109,603 and only £9000 of this was assured income The sum of £13,000 must be raised before the end of the year if all its facilities are to remain available

IRISH MEDICAL SCHOOLS AND GRADUATES ASSOCIATION —The autumn dinner of this association, always a festive occasion, was held on Nov 29th at Claridge's Hotel, the day of the Royal wedding, and a telegram of congratulation was sent to the Duke and Duchess of Kent Colonel G A. Moore presided Mr. R Lindsay Rea, who proposed The Guests, welcomed there Sir Thomas Miles, president of the Royal College of Surgeons in Ireland. Sir Thomas, in responding, said that Irishmen differed from Englishmen and Scotsmen in never boasting when abroad of the beauty or the past history of their country to foreigners, they felt it was only when speaking to a fellow Irishman that they would be fully understood Sir William Byrne proposed The Association In the course of a life, he said, devoted mainly to the public service, he had come to realise the regret which would be felt by all its members if the Irish members were to drop out. Col Moore, who replied, said the aim of the association was to form a link between members of the Irish medical schools who had come to live in England They also had the opportunity of lunching together at the annual meetings of the British Medical Association.

SPECIAL ARTICLES

MANCHESTER HOSPITALS INQUIRY

REPORT OF THE INSPECTORS

THE report of two inspectors of the Ministry of Health into the circumstances attending the death of Mrs Molly Taylor at Crumpsall Hospital on May 14th was made public on Nov 29th[1] The inquiry, which was conducted by Dr Isabella Cameron and Mr H J Comyns, barrister-at law, was opened on Sept 20th in the Town Hall, Manchester, and occupied five and a half days About 200 persons not engaged in the investigation attended each day Members of the public present, of whom women predominated, comprised both critics and supporters of the hospitals, and at intervals they either applauded or dissented from the answers given by witnesses Although the conduct of the inquiry was thus disturbed, the inspectors considered it inadvisable to impair the public character of the proceedings by having the disturbers removed

An earlier investigation had been made in July by the board of management of St Mary's Maternity Hospital, with the approval of the Manchester public health committee the investigating committee being made up of Mr W Cobbett, C B E (chairman of the Royal Infirmary), Dr R Veitch Clark (M O H for the city), Sir Walter Moberley (vice chancellor of the University), Prof Miles H Phillips (Sheffield), and Prof W Fletcher Shaw (St Mary's Hospital) This committee sat in private, and when their report[2] was presented to the city council, a motion was carried asking for a public inquiry for which a petition signed by some 9000 persons had been presented to the council

At the inquiry Mr Leslie M Lever (solicitor) appeared for the relatives of Mrs Taylor, Mr J E Lustgarten (counsel) for St Mary's Hospital, Mr R H Adcock (solicitor and deputy town clerk) for Manchester City Council Miss D Foster Jeffery (counsel) for Manchester and Salford Women Citizens' Association, Mrs A Ramacott and Mrs Frank Anderson for the Women's Advisory Council of the Manchester Labour Party, Mrs Bamber for local members of the Women's Coöperative Guild, Mrs Grace Usher watched the proceedings for the Maternal Mortality Committee At the opening they agreed that evidence should be taken on oath

Outline of the Case

Mrs Molly Taylor, a Jewess aged 19 years, the ife of Sidney Taylor, attended the antenatal clinic St Mary's Hospital on Feb 10th March 10th, al at intervals of about a fortnight up to May 5th be estimated date of confinement was May 16th contribution of £2 was paid to the hospital on her half On May 11th labour pains set in and the tient with her mother Mrs Mintz arrived at Mary's Hospital at about 6 P M On her case et (reproduced) it is recorded that "pains began 1 A.M this morning," based apparently on answers ven by Mrs Taylor and Mrs. Mintz to a question t by the house surgeon but the evidence of Mrs. intz suggested that the pains began at 1 P M The sults of abdominal and rectal examinations are ven on the case sheet on which a pencil note at e top of the antenatal record runs Baby born O P but the space at the foot of the form headed "On Discharge" was not filled in Dr D S Brownlie, the house surgeon, examined Mrs Taylor in the out-patient department soon after her arrival, and estimated that labour would continue for about three to four hours. The child was in fact born there at about 6 20 P M

One of the wards in St Mary's Hospital, containing 21 beds, had been closed for repainting and cleaning and no bed was available for the patient It was decided by the medical officer on duty to transfer the patient and the infant by ambulance to the Crumpsall Hospital of the Manchester city council Dr R H

The Case-sheet at St Mary's Hospital

Transfer to Crumpsall

ST MARY'S HOSPITALS

Maternity Department

Baby born in O P

Name Molly Taylor Age 19 Dr F Shaw

Address 45, Bridoak street Cheetham

Previous pregnancies		Measurements		Urine					B P
				1934 Date	S G	Reaction	Albumen	Sugar	
1	P	I-S	10						120
2		I-C	11	10/2	Insuff	Acid	Clear	Nil	70
3		Ex conj	8"	10/3	”	”			110
4		D C.*		24/3		”	”	”	120
5		Bi Tr		7/4	1020		”	”	110
6		Outlet		21/4	Insuff	Alk.	”		110
7				5/5	”	Acid	”	”	110

Date of L M August 9th, 1933
May 16th, 1934

P = primigrav Alk. = alkaline * R. Newton

Antenatal Notes

P M H P S H
Uterus 24 weeks Vertex Chest Heart w a p
Lungs w.a.p
10/3/34 Vertex Breasts need attention
24/3/34 Vertex Feels well (14) D C later
7/4/34 fixing White note
21/4/34 Vertex D C please
5/5/34 Vertex fixed

11/5/34

On Admission

pains began 1 A M this morning
stated water not broken

Abdominal Examination

Back to left side vertex. head fixed
F H S below umbilicus equally well both sides
P R. os ½ Dilated

Vaginal Examination

Time	Examined by	Membranes	Cervix	Remarks

R Mist cascara co ½ oz. T D.S.

On Discharge

Mother Child

Notes made at Crumpsall Hospital

Molly Taylor
Admitted from St Mary's where delivered at 6 P.M Arrived about 8 P M

9 15 about called to see her with history of considerable haemorrhage and some clots Pale, pulse rapid. Uterus fairly firm Bed on blocks

Ergotinine gr 1/100 Pituitrin 1 c c.
Glucose Saline } ordered
Ergotinine gr 1/100 gh

Reported at about 3.30 Dyspnoea excitable Pulse very poor Face arms and Thorax cold Morphia gr ¼ Pituitrin 1 c c Abdo not distended Uterus not overdistended. Little external haemorrhage No gross signs of intraperitoneal haemorrhage Attempted intravenous saline via needle in left arm prevented by intense restlessness One pint given into [illegible] arm after cutting down on vein. 2 doses of M.I Adrenalin in o heart 1/3 gr [illegible] intravenously after saline heart sounds being imperceptible, respiratory efforts [illegible] and slight.
Died about 4 45 A.M.

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[1] A transcript of the shorthand notes of the inquiry can be seen at the Manchester Town Hall at all convenient times for a month after the publication of the report which contains no reference to it

[2] See THE LANCET July 21st p 1[illegible]

Nattrass, resident obstetric surgeon at St. Mary's, therefore instructed Dr. Brownlie to write a letter to the medical officer at Crumpsall to say that the patient had been delivered of a child soon after arriving at the out-patient department, but that no bed was available at the hospital, and asking for her admission to Crumpsall It was added that the patient and infant were quite fit to travel in the ambulance and that there was no tear of the perineum. The time of the patient's admission to Crumpsall is given as 7.40 P.M., and after being transferred in the reception-room from the ambulance stretcher to a stretcher used at Crumpsall, the patient was removed to a maternity ward, undressed and put to bed She was examined on her admission to the ward by Sister Massiter who was in charge, but was not then seen by a medical officer At about 9 P M Sister Massiter found her condition less satisfactory than it had been earlier and telephoned for Dr B. R. Bramwell, the officer in charge, who ordered treatment and took additional measures when recalled in the early morning. The patient died at about 4 25 A M

A brother-in-law, Mr. Harry Taylor, had inquired at Crumpsall by telephone at about 10 P.M. as to Mrs. Taylor's condition and received, after a few minutes' delay for inquiries, the answer that she was very comfortable. Between 3.15 and 3 45 A.M. an inmate of the institution was despatched on foot to inform the relatives that Mrs Taylor was gravely ill, but they were unable to reach Crumpsall before her death Permission for a post-mortem examination was withheld by the relatives.

Allegations by Relatives and Others

The handling of the case at St. Mary's and Crumpsall Hospitals was criticised at the inquiry on 15 grounds The inspectors deal with each of these in turn as follows :—

ALLEGATIONS 1 TO 3

That the patient should not have been transferred to another institution.

That the Departmental Committee on Maternal Mortality had indicated that patients suffering from profound shock or collapse after severe hæmorrhage may incur greater risk from removal than from treatment on the spot, although the facilities available might be imperfect If it had been ascertained that Mrs Taylor was suffering from shock, she should have been allowed to remain at rest, however bad the arrangements were at St Mary's

That no true attention was given to Mrs Taylor before she left St Mary's, and that she was not given the rest or nourishment she needed

The question whether the patient could or could not have been retained at St. Mary's Hospital is, of course, one of the first importance. We recommend acceptance of the evidence tendered on behalf of the hospital that on the evening of May 11th each ward contained two patients in excess of the normal number and that the only bed available was in a septic ward Prof Whitehouse (Birmingham) expressed the view that on the information recorded in the medical reports he would have agreed to a transfer to Crumpsall, but not if there had been any hæmorrhage proceeding. Mrs. Hunter, organising secretary of the Women Citizens' Association, handed in replies from various hospitals to an inquiry as to how long a period should elapse before it could be considered safe to remove a woman just delivered of a child ; in most of these replies stress is laid on the point that the patient should not be removed for at least an hour after childbirth. Dr. Nattrass stated that in six months 94 cases had been transferred to other institutions *before* delivery, and that four patients had after delivery similarly been transferred, all of the latter cases having occurred during the period of spring cleaning which occupied five weeks. During the previous six months, about 60 cases had been transferred before delivery. We suggest that every effort should be made by St Mary's Hospital to reduce the number of transfers to other hospitals.

The answer to the criticism that if it had been ascertained that Mrs. Taylor was suffering from shock she should have been allowed to remain at rest in the hospital is that no clinical signs of shock were at that time manifest. If however in future it should be necessary to transfer a patient to another hospital, soon after delivery, we recommend that at least an hour should elapse before her transfer to an ambulance unless the doctor in charge otherwise decides.

As respects the supply of nourishment Prof. Whitehouse agreed that within less than an hour after delivery the patient should be given nourishment Miss Jeffery pointed out that though the birth had occurred at 6 20 P M. no nourishment had been given until after the patient had been warded at Crumpsall at 8 P M. Prof. Whitehouse also agreed that if between 7 P.M. and 7.40 P.M. no attempt had been made to palpate the abdomen in order to verify that the uterus was firmly contracted, this would not be right. Dr. J. S. Fairbairn also agreed that before the patient started on her journey to Crumpsall it would have been advisable to give her hot nourishment and added later that the patient should have been given, after delivery of the child, an hour's quiet rest and some food. Prof. Leyland Robinson thought that the question would depend on how much nourishment the patient had recently had, adding that it would always be desirable to make the patient comfortable. Dr. Nattrass could not say whether the patient was or was not given nourishment, but added that if she had asked for nourishment she would have got it. Nurse Parks said that she saw Sister Graham bring in a cup for the patient, but it would seem from Sister Birtwell's and Sister Graham's statement that the cup contained a dose of ergot, and that a drink of water was later given.

We recommend that, before the transfer to another hospital of a patient who has recently been delivered of a child, nourishment should be supplied to her unless a medical direction to the contrary is given.

ALLEGATION 4

That the patient was left alone with her mother in the ambulance of St Mary's Hospital from 7 P.M. to 7 25 P.M. while the infant was being bathed

The correctness of the statement made by Mrs. Mintz that between 7 and 7.25 P.M. she was in the ambulance alone with the patient is denied by Sister Birtwell who stated that she waited with the ambulance until Nurse Hupton came with the baby, and that she talked with Mrs. Mintz and the patient. Nurse Hupton also alleged that Sister Birtwell was in the ambulance, with the patient and Mrs Mintz, when she brought the baby to the ambulance The ambulance driver and attendant also deposed that a nurse remained in the ambulance till the baby was brought down.

ALLEGATION 5

That the journey by ambulance to Crumpsall was over stone setts and that during the journey no attention was given to the patient and a drink of water refused

As respects the journey to Crumpsall, Nurse Hupton asserted that, so far as she could say, the journey was a comfortable one and that no complaint whatever was made by the patient or Mrs Mintz Nurse Hupton said that when Crumpsall was reached she satisfied herself by an examination that the condition of the patient was extremely good, that the uterus was well contracted, that she had very little loss of blood, and that the pulse was good Nurse Hupton denied that during the journey the patient asked for a drink of water. She stated later that, on arrival at Crumpsall, before the ambulance doors were opened she examined the patient, took her pulse, examined the abdomen, and changed the sanitary pads. Nurse Thomas, who assisted in undressing Mrs. Taylor at Crumpsall

Hospital, deposed that she did not see any bandage or surgical dressings, although she later admitted that the pads might have been in the blankets It appears, however, that Nurse Daft commenced the process of undressing the patient Unfortunately this nurse has left the hospital and we were not able to reach any conclusion on this point Nurse Hupton did not however impress us as a nurse of sufficient experience to be given charge of a patient travelling in an ambulance so recently after childbirth

We recommend that, whenever a maternity patient is transferred by ambulance after delivery, a qualified midwife of experience should accompany the patient

ALLEGATION 6

That on arrival at Crumpsall Hospital 20 minutes were occupied in filling particulars in forms instead of examining the condition of the patient and attending to her needs

On the charge that valuable time was spent in filling up forms instead of attending to the patient, Mrs Mintz in cross-examination eventually agreed that while she was giving the particulars to the porter in the lodge the patient had been taken into the reception room at Crumpsall and placed on a stretcher on the floor, but later said that the patient was in the ambulance while particulars were given Mrs Mintz also alleged that the patient was waiting a good half hour on the floor of the reception-room Nurse Hupton stated that Mrs Mintz was left at the porter's lodge to give the particulars, and that the ambulance proceeded to the reception-room with the patient and the nurse She added that the patient was kept in the ambulance for two or three minutes only and was then taken into the reception-room The patient was about 20 minutes in the reception-room before she was removed

On the point whether Mrs Mintz was dropped at the porter's lodge at Crumpsall Hospital, the evidence of the ambulance driver and attendant and of the porter who took the particulars did not accord with that of Nurse Hupton as they clearly stated that the ambulance did not stop at the porter's lodge, and that the ambulance attendant accompanied Mrs Mintz to the lodge from the reception-room at Crumpsall Miss Jeffery suggested that this discrepancy cast doubt on Nurse Hupton's statement that she had examined the patient's condition at the gates of Crumpsall Mr Adcock pointed out that the distance between the reception-room and the entrance gate was a matter of 20 or 30 yards only

The porter who took the particulars alleged that not more than three minutes were so occupied An assistant nurse, Mrs Law, who received the patient, estimated that 10 or 15 minutes elapsed between the arrival of the ambulance and the taking of the patient to the maternity ward, but in any event we are satisfied that the supply of particulars did not cause any delay in attending to the patient's needs In view of the importance of establishing and maintaining the identity of patients, Mrs Law acted rightly in asking the patient her name and age.

ALLEGATION 7

That at Crumpsall Hospital a doctor was not called till 9 15 P.M., although his note then made indicates a history of "considerable hæmorrhage and some clots"

It is true that the patient was not seen by a doctor before 9 15 P.M., but the maternity sister-in-charge, Sister Massiter, stated that both she and Nurse [illegible], who was in attendance on the patient, considered that before 9 P.M the condition of the patient was [illegible] After 9 P.M the night nurse Nurse Turrell, reported to Sister Massiter that further hæmorrhage, in addition to a small blood clot discovered at about [illegible] 9 P.M. had occurred Sister Massiter did not take the hæmorrhage to be an abnormal amount at the [illegible] She found the pulse not so strong as it was [illegible] Dr Bramwell, the medical officer in charge, was then called He found the uterus fairly firmly contracted and the pulse good, but a little rapid [illegible] regarded the hæmorrhage as slightly in excess of normal, but he saw no indication of a dangerous or abnormal condition. On his night round at about 11.30 P.M. the night sister—Sister King—reported to him that the patient's condition was materially unchanged Later, she was concerned because the patient was a little restless and had not slept properly, and she called Dr Bramwell On arrival he found the pulse still further increased in speed and not as strong, the uterus firmly contracted, and no sign of any hæmorrhage either internal or external

As Dr Bramwell's notes on the clinical condition and treatment contained no reference to his having been called to the patient at 2 A.M., Mr Lever endeavoured to show that after the visit at 9 15 P.M. he did not see the patient again until 3 30 A.M., but Sister King, Nurse Turrell, and Dr Bramwell all alleged that the doctor was in attendance at 2 20 A.M., and remained with the patient from that time until she died

We recommend the acceptance of the evidence that Dr Bramwell was in attendance on the patient from 2 20 A.M. to the time of her death, and we see no sufficient reason for criticising the action of the sister-in-charge, who was a qualified and experienced midwife, in not calling in Dr Bramwell before 9 15 P.M

ALLEGATION 8

That at 9 15 P.M the patient's condition was serious and the relatives should have been called

Sister Massiter denied that at 9 P.M the patient was in a "bad way" Sister King did not consider that the patient was in a serious condition at 10 15 P.M. when she examined Mrs Taylor, and first thought her condition to be serious at 3 30 A.M This view is not however in entire agreement with Sister King's statement that at about 2 A.M she thought of sending a sick note to the patient's relatives, but decided that Dr Bramwell should first be called Dr Bramwell considered that the patient's condition became serious at 2 A.M., and very serious at about 3 30 A.M

There appears to be no adequate reason for holding that the relatives should have been called at 9 15 P.M

ALLEGATION 9

That when inquiry was made by telephone, at about 10 P.M., the relatives should have been informed of the patient's serious state, and that this omission prevented them from assisting if a blood transfusion were ordered by the doctor

The grounds on which the telephone message of 10 P.M was based have just been indicated

ALLEGATION 10

That although it is stated in the Cobbett report that the relatives were sent for shortly after 2 A.M., the messenger did not arrive at the house of Mrs Mintz until 4 A.M

Sister King stated that she made out the summons to the relatives at about 3 A.M. Mr Hewitt, the lodge porter, deposed that Sister King handed him the note at 3.25 A.M., and that after obtaining Mr Taylor's address he handed it at about 3 40 A.M. to the porter whose duty it was to awaken a messenger and dispatch him Mr Howes, the porter in question, said that he received the note at about 3 A.M He at once awoke a messenger, who came down about 10 or 15 minutes later The messenger was a man said to be getting on for 60 years of age, and he returned to the hospital somewhere about 4 A.M

It would seem that the statement of the relatives that the messenger did not arrive at their house until 4 A.M is correct Arrangements have since been made at Crumpsall for the transmission by telephone of such messages to the police on duty in the locality by whom the message would be delivered

ALLEGATION 11

That when the husband (who preceded the other relatives) arrived at Crumpsall the patient had been laid out for burial and that "the doctor was lying" it being said that the patient had died at 4 [illegible] A.M., because the husband left Crumpsall at 4.35 A.M. and his wife had been laid out for burial

The record by Dr. Bramwell that the patient died at 4.25 A M is confirmed by Sister King, who stated that the body was removed to another ward, placed on another mattress and covered with a sheet, but that it was not washed as this had been done when Mrs. Taylor was alive, nor was the hair combed before their arrival as alleged by the relative. Sister King also intimated that Mr. Taylor called within a few minutes of the death, and that the body had not then been removed from the ward in which Mrs. Taylor had died.

We see no sufficient reason for doubting the correctness of the record of the death.

ALLEGATION 12

That a cup of water was thrown by a nurse over Mrs. Mintz after she had been informed of her daughter's death.

Both Mr. Sidney Taylor, the patient's husband, and Miss Betty Mintz, her sister, stated that a cup or glass of water had been thrown over Mrs. Mintz by a nurse. The nurse in question admitted that as Mrs Mintz was screaming loudly and could not be pacified, she splashed some water from a cup into the face of Mrs. Mintz, who stopped screaming, and that the relatives seemed grateful for this act.

ALLEGATION 13

That a telephone message should have been sent from St Mary's to Crumpsall to say that a patient was being transferred.

Both Dr Fairbairn and Dr. Nattrass agreed that where a hospital transfers a patient to another institution a telephone message should be sent, and Prof. Leyland Robinson stated that in Liverpool this course was adopted The M O.H for Manchester also said that it would be preferable to notify a municipal hospital of the transfer of a patient and agreed that fuller information should be given than that supplied as respects Mrs. Taylor.

It appears from the evidence of Dr Ramsay, medical superintendent of Crumpsall Hospital, that St. Mary's Hospital now send a message by telephone when a patient is transferred to Crumpsall, and we suggest that this practice should be adopted as between all hospitals receiving maternity patients.

ALLEGATION 14

That there was no record of a vaginal examination having been made at St Mary's on May 11th, or of the patient's blood pressure, and that the space for particulars "on discharge" was not filled in

Prof Whitehouse expressed the view that a vaginal examination in the out-patient department would have invited the incidence of sepsis, and that the examination actually made was the better procedure The desirability of taking the blood pressure of patients immediately after labour was repeatedly advocated by Mr Lever, but we are not prepared to submit any recommendation on this point

On the other hand, we consider that notes as to the condition of the patient on her transfer to Crumpsall should have been completed on the case-sheet, and that it would be desirable that a copy of this form, with further relevant notes, should accompany any maternity patient on her transfer to another hospital

ALLEGATION 15

That a discharge book is not kept at St Mary's Hospital, and without it the number of vacant beds on a given day cannot be readily ascertained

The board of management of St. Mary's Hospital might well consider this suggestion as part of a reorganisation of the system of booking beds recommended later in this report

Cause of Death

Dr. Fairbairn considered that the evidence indicated that the patient was well when she left St. Mary's and when she was taken in at Crumpsall, that her death was not due to hæmorrhage, and that obstetric shock was the most likely reason Prof. Leyland Robinson believed that, while to some extent the cause of death remained speculative, it was probably due to delayed obstetric shock. He did not consider it just to say that anything done was responsible for the death of the patient Prof. Whitehouse regarded the evidence as showing that the patient's condition was excellent when she left St Mary's Hospital, that the case was quite normal at 8 P M, and that the cause of death was obstetric shock which supervened later.

We are of opinion from the evidence submitted and in the absence of a report on a post-mortem examination that Mrs Taylor's death was due to the condition known medically as delayed obstetric shock and that the fatal issue was neither caused nor materially affected by her transfer from St Mary's Hospital to Crumpsall Hospital.

Administrative Arrangements

STAFFING AT CRUMPSALL

Although we do not consider that the arrangements for staffing the maternity wards at Crumpsall Hospital were allowed to act prejudicially in the care and treatment provided for Mrs. Taylor, we are of opinion that the position at this hospital was at that time highly unsatisfactory, and specific attention had been drawn to this fact by the surveying medical officers of the Ministry of Health in November, 1933 Dr. Bramwell stated that he understood that four maternity nurses had been appointed recently and that a resident obstetric surgeon had just been appointed Although it was correctly stated at the inquiry that these new arrangements followed (in point of time) Mrs Taylor's admission to Crumpsall, they had been proposed some months before the case of Mrs Taylor occurred.

ALLOTMENT OF BEDS AT ST MARY'S

St Mary's Maternity Hospital is an old-established institution which holds a notable place in the voluntary maternity hospitals of the country and it is of repute as a training school for medical students and pupil midwives There is an extensive out-patient department. It serves the City of Manchester which has been extended in recent years and also a large and populous area beyond its boundaries Primarily the hospital treats complicated cases of pregnancy and childbirth, many of which are of the utmost gravity. In addition, primiparæ are admitted as accommodation permits

We are informed by the solicitors to the hospital that the number of applications for beds for maternity patients, and the number of beds for such patients available at the hospital, were as follows —

Year	Applications	Maternity beds available.
1929	1374	90
1930	1430	90
1931	1535	90
1932	1590	101

The number of beds had been increased in 1927 from 70 to 90, and in 1932 was increased to 101. In 1931, 860 women became in-patients in circumstances of emergency, and in 1932, 918 such patients were admitted to the hospital Cases of this kind would have a first call on the beds available

The majority of the beds are in large wards and adaptation to modern standards of ward accommodation, &c, would present numerous difficulties Thorough cleaning and re-decoration, which are of the first importance in maternity wards as a means of prevention of septic infection, should be undertaken regularly and carried out systematically The number of beds out of use at any one time on account of cleaning necessarily depends on the size of the ward unit It is further restricted by that separation of patients in clinical groups which is essential in maternity in patient practice By an available hospital bed is meant more than a bedstead and bedding, it implies the provision of adequate air and floor space, suitable medical and nursing attendance and, as far as is humanly possible, safety from infection for the individual patient and the other patients in residence When thorough cleaning is in progress the number of beds available is of necessity restricted and the pressure of this limitation is increased in proportion to the number of grave emergencies with which the hospital is called on to deal Overcrowding in maternity wards and over pressure of staff cannot be countenanced because of the ever-present danger of septic infection.

AVOIDANCE OF OVER BOOKING

Public attention has recently been directed to the portance of avoiding the over booking of maternity ards The date of confinement cannot, as a rule, predicted with strict accuracy and consequently e admission of maternity patients cannot be rranged for a fixed date When the demand for commodation is in excess of the maternity beds vailable an immediate problem arises, especially the smaller institutions The alternatives are (*a*) to mit the number of patients accepted, or (*b*) to book ithout numerical limitation and depend on making ther provision (whether domiciliary or in patient) or the individual patients for whom no bed is available t the time of application for admission. The former ethod is practised in many of the more recently tablished maternity institutions, particularly in hose which admit a high percentage of normal cases The latter method is that adopted at St Mary's nd at some other hospitals which are generally omparable in type

In the case of the great general hospitals with aternity departments such as the municipal hospitals f Manchester the maternity beds represent a relatively mall percentage of the total number of beds available d suitable emergency arrangements can therefore made which are impossible in smaller institutions position with regard to maternity in patient ovision in Manchester and in its environs and the tent to which it is used has changed materially recent years The number of births which took ace in institutions in the city has risen steadily m 10 9 per cent of the total births in 1924 to 3 per cent in 1933 During that period the mber of maternity beds in the hospitals controlled public authorities in Manchester and in the ghbouring districts has been greatly increased rumpsall and Withington, which were formerly law institutions, have been appropriated by the council to the public health services and their ternity departments are now under municipal [illegible]

These changes are in part at least an expression a new orientation of maternity work, and an ation of the greatly increased public responsibility the care of the mother It is with full appreciation work which St Mary's Hospital has done in the at we recommend its board of management reorganise the system of booking for admission through the antenatal clinic in excess of the number of patients for whom accommodation can be provided with a reasonable degree of certainty In dealing with applicants for admission, they will doubtless find it desirable to coöperate with other hospital authorities responsible for maternity departments in the area which the hospital serves The possibility of further use of the extern service of the hospital and of other arrangements for domiciliary attendance will doubtless also be considered. In discussing methods of coöperation it will obviously be necessary to bear in mind that antenatal supervision should be closely associated with attendance at confinement and during the lying-in period

We also recommend St Mary's to appoint a member of its medical staff who is senior in status and experience to the resident medical staff to be responsible for the general administration of the hospital in its medical aspects, particularly in relation to booking, registration, admission, and discharge of patients It is desirable that in addition to the notification on the printed form which is handed to a patient when she books a bed the attention of each patient should personally be directed to the importance of attendance at the hospital at the beginning of labour, and also to the fact that the hospital cannot guarantee admission We anticipate, however, that with a revised system of booking the reference of patients during labour to other hospitals should be infrequent

Recommendations

1 AS TO MUNICIPAL SERVICES

(*a*) That the present position as to staffing at Crumpsall Hospital should be reviewed by the City Council who should satisfy themselves that the arrangements for medical and nursing attendance are adequate for the number of beds now provided for maternity patients They should also take steps to ensure that the services of the obstetric consultant are utilised fully—both in dealing with questions of administration of the maternity wards and in consultation in cases presenting difficulty

(*b*) That the use of the municipal ambulance service in the transport of maternity cases to hospital should be extended

(*c*) That the arrangements at Crumpsall Hospital for the dispatch of messages to the relatives of a patient should be revised

2 WITH REGARD TO ST MARY'S HOSPITAL

(*a*) That every effort should be made by the board of management to reduce the number of patients transferred to other hospitals by a reorganisation of the system of booking cases which should be placed under the charge of a responsible officer and that the board should confer with other hospital authorities for the purpose of securing additional coöperation with them

(*b*) That an administrative medical officer, senior in status to the resident medical staff, should be charged with the responsibility for the administration of the hospital in its medical aspects

(*c*) That the printed notice supplied at the hospital when a bed is booked should show more clearly that a bed is not guaranteed and that the attention of each patient should be drawn to this statement on the notice

(*d*) That if, in an exceptional case, it should be found necessary to transfer a patient to another hospital soon after delivery ample time should elapse after delivery before her transfer to an ambulance and that before such transfer suitable nourishment should be supplied to her, unless a medical direction to the contrary is given.

(*e*) That when a maternity patient is transferred by ambulance after delivery a qualified midwife of experience should accompany the patient.

(*f*) That a telephone message notifying the transfer should be sent as a matter of routine when a patient is transferred to another hospital

(*g*) That fuller records of the discharge of patients should be kept

PANEL AND CONTRACT PRACTICE

Who Pays the Fee?

A CURIOUS problem occurred recently in a London practice in which an insurance doctor was called to a nursing-home to see a patient who was desperately ill and who died in about 14 days from the date of his admission The doctor was informed that the patient was an insured person but no medical card was produced Such a card would now be useless as the patient, being dead, ceases to be an insured person, and in any case he would not be able to sign it in the appropriate section As the doctor was informed of the insurance status he would apparently *not be entitled to charge the patient for his attendance* privately without giving a receipt on the official form under Clause 7 (2) of the terms of service. This receipt enables the patient to reclaim the fee paid if he is found by the insurance committee to be entitled to medical benefit, he is then credited to the doctor's list and counts as such from the beginning of next quarter But in this case, as the patient died before the middle of the quarter, his name will probably be removed owing to death before the next quarter commences To be effective this official receipt must be presented to the insurance committee within 14 days of the payment of the fee to the doctor, together with an explanation why the medical card was not available As in this case no fee was paid, it is open to the doctor to send an account to the executors, providing that he had handed to the patient an account in the form used when the fee is not paid in cash at the time of the *first attendance* This form has to be sent by the patient to the insurance committee within 14 days of its receipt from the doctor As the patient was alone in a nursing-home and obviously too ill to attend to such matters himself, *neither of these forms could* have been used. The question arises. Will this attendance be paid for, and by whom?

Certification: One More Word

Any who think that the last word has now been said on certification might do well to read the paper given by Mr W. J Foster, LL B, on "Incapacity for Work within the meaning of the N H I. Acts," at the Medico-Legal Society last May (see THE LANCET, 1934, i, 1190), and now reprinted (Med -Leg. and Crimin. Rev, October, 1934) He states very clearly from the legal point of view the difficulties connected with the administration of the Act; for example, it was decided as long ago as 1916 that a man cannot be "rendered incapable of work" if he is already incapacitated, but medical certificates are still frequently issued in respect of supervening illnesses Again not many insurance practitioners appreciate the difference between incapacity *for work* and incapacity *to work.* Mr Foster illustrated it by quoting a case in which a one-eyed workman whose loss was not apparent had been fully able to work. He sustained an accident which caused the removal of the blind eye This rendered his condition obvious; although just as capable of work as formerly, he was quite unable to obtain work and he was held to have incapacity for work. An epileptic may have a disability of such a nature that there is in consequence an incapacity for work in the sense that the one-eyed workman was incapacitated But he is not of necessity incapable of work in the sense entitling him to claim benefit under the Act In the subsequent discussion it was pointed out that although doctors were not trained to logical thinking as a habit the marvel was that they made so few mistakes Dr. J. L. Halliday, regional medical officer for Scotland, remarks (Brit. Med Jour, Nov 24th, Suppl p 261) that the medical certificate has come to be regarded as a money order He points out that at a time when the death-rate was falling, when there was no excessive incidence of infectious disease, when the school-children were healthier, 90 per cent of the medical practitioners in the country were continuing to give their signed opinion that the working-classes were becoming increasingly incapable of work The certificates were personal opinions about the interpretation of an Act of Parliament, this raised the question: Do the doctors know the law? Dr Halliday admits the difficulty of stating the construction to be placed on the term "incapable of work" and the further difficulty in determining a person's working capacity. Good working capacity, he writes, results from the harmonious functioning of the mind and body. If either or both break down and incapacity results, it is the doctor's duty to discover if there is damage to bodily structure or mental maladjustment to be investigated. Assessment of capacity may be difficult, but if all the data were available there would be little divergence of medical opinion on capacity. In an ideal system of organised medicine the certificate of incapacity would answer three questions —

> (1) Is the man presumably unfit to undertake his usual duties as a working citizen?
>
> (2) If so, why?
>
> (3) What action is required to restore him as soon as possible to efficient citizenship?

Such a form of certificate would tend to ensure that every known means was being used to render the unfit man fit The problem is not merely one of improving administration but of revolutionising the part to be played by general practitioners in a world where specialists and technicians are becoming ever more specialised and technical.

A Public Assistance Panel

Subject to the approval of the Ministry of Health the Warrington public assistance committee decided last month to inaugurate for an experimental period of two years a panel medical service, starting on Feb 1st, 1935, to provide domiciliary medical relief and dispensing services for poor people. The engagements of two medical officers are to be terminated and all the medical practitioners in Warrington are to be invited to cooperate by joining the panel The scale of payment has not been made public, but the terms are to be subject to revision in six months. The M O H estimates that the scheme will cost the ratepayers more money, possibly in the initial stages £500 compared with the present outlay of £180, but, as was said at the meeting where the resolution was adopted, "the committee would have the satisfaction of knowing that people would not be barred by their poverty from choosing their own doctor and having the best medicines and appliances that could be given" The example of Warrington will be watched with interest over the whole country The apparent hardship to the district officers should be mitigated by retaining on their own lists the bulk of the patients they used to attend on the district

PUBLIC HEALTH

Maternal Care in Monmouthshire

LAST week the Monmouthshire county council proved the scheme for providing a maternity spital of 20–25 beds The opportunity arose out a gift by Sir John Beynon as a memorial to his ther of a fine mansion known as "The Coldra," uated three miles out of Newport in an estate of ven acres Capital expenditure to the amount of 500 has been authorised by the council for purpose of altering and equipping the mansion its new purpose The cost of maintaining 20 beds a full year is assessed at £5200, of which £1000 ll be returned in the form of maternity benefits der the N H I Acts, apart from any additional yments made by or on behalf of the patients penny rate over the county would roughly cover e remainder Need of such provision has been enly felt for some time There is much overowding in the homes, but travelling is difficult, d expectant mothers are apt to stay too long at me as the doctor has hesitated to take the risk the long journey to Cardiff The small local neral hospitals are not so well equipped for obste ral help, and blood transfusion is less easily avail le During the last few years 16 antenatal clinics ve been opened in Monmouthshire, expectant others have been helped by provision of outfits d extra milk, and the service of midwives has been refully supervised At the same time improveent in the physical health of school girls is eliminatg the severer types of rickets In spite of these forts, as Dr D Rocyn Jones has long pointed out, he maternal mortality rate continues to rise All cept three of the Welsh counties are on the Ministry f Health's black list, the rate for Monmouthhire was 7 2 per 1000 live births last year, conderably in excess of the already high average of 2 for the last ten years Of the 39 women who ed during pregnancy or labour in Monmouthshire uring the 12 months ended July 31st last 17 (or 4 per cent) were primiparæ Dr Rocyn Jones is f opinion that all the efforts so far made have been ounterbalanced by economic difficulties, and especi ally by the increased abortion rate, 10 of the 39 eaths mentioned followed abortion, and of these last 6, he tells us, were brought about by the use f drugs or by illegal abortion The new maternity ome is to be opened next April with an annual rant of £400 from the Ministry of Health It will e known as the Lydia Beynon Maternity Hospital

M O.H.'s of Irish Counties

Our Irish correspondent writes that although ce 1925 it has been the duty of each county council the Irish Free State to appoint a county medical ficer of health there are still several counties in ich that duty has been neglected A few months o the Minister for Local Government and Public Health stated that medical officers of health had en appointed in nine of the 27 county areas Some have been appointed in the intervening months, and the parliamentary secretary recently gave the number of county areas without medical officers of health as five The department has approached some of the county councils within the past few weeks, but in three cases at least—in the counties of Clare, Leitrim, and Longford—the councils refused to take any steps The entire success of the Milk Bill, now before the legislature, when it becomes law, will depend on the efficiency of the public health department in each county, and in counties in which there is no medical officer of health it cannot be more than a dead letter The need to appoint medical officers of health has therefore become urgent, and it seems likely that, if the county councils still remain disobedient to the law, the Minister will be compelled to carry out his threat of taking the appointment into his own hands.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV 24TH, 1934

Notifications —The following cases of infectious disease were notified during the week. Small-pox, 0, scarlet fever, 3822, diphtheria, 1742, enteric fever, 13, acute pneumonia (primary or influenzal), 1021, puerperal fever, 82, puerperal pyrexia, 126, cerebro spinal fever, 11, acute poliomyelitis, 14, acute polio-encephalitis, 4, encephalitis lethargica, 11, dysentery, 20, ophthalmia neonatorum, 89 No case of cholera, plague, or typhus fever was notified during the week

The number of cases in the Infectious Hospitals of the London County Council on Dec. 3rd–4th was as follows Small pox 0 scarlet fever, 1877 diphtheria, 2083, measles 186 whooping cough 188 puerperal fever 18 mothers (plus 7 babies), encephalitis lethargica, 268, poliomyelitis 10 other diseases, 262 At St Margaret's Hospital there were 13 babies (plus 7 mothers) with ophthalmia neonatorum

Deaths —In 121 great towns, including London, there was no death from small pox, enteric fever or measles, 7 (1) from scarlet fever, 14 (2) from whooping-cough, 40 (8) from diphtheria, 40 (17) from diarrhœa and enteritis under two years, and 61 (11) from influenza *The figures in parentheses are those for* London itself

Seven great towns reported 2 deaths each from diphtheria—viz., Willesden Bootle, Burnley Leeds Liverpool Manchester and Sheffield Deaths attributed to influenza occurred in forty great towns, Birmingham reporting 4 no other place more than 2

The number of stillbirths notified during the week was 251 (*corresponding* to a rate of 43 per 1000 total births), including 33 in London

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NEW SWEDISH MENTAL HOSPITAL.—A new State asylum is to be opened at Umea in North *Sweden* at a cost of some £385 000 The buildings with the staff will house about 1500 persons and there are more rooms in it than in the Vatican

SOUTH SHIELDS HOSPITAL.—The sum of £14,000 is needed to complete the extension fund of this hospital During the past 14 years £40 000 has been raised The number of beds at present is 124 and it is proposed to increase the *number* to 174 even this will only provide one and a half beds per 1000 of the population

CORRESPONDENCE

FITNESS FOR PUBLIC SERVICE

To the Editor of THE LANCET

SIR,—It is an anomalous and sad state of affairs that an Act of Parliament should keep out from an important branch of the public medical services many of the most suitable doctors for that service. But this misfortune is happening. Your correspondents cured by the aid of A P treatment point this out in your last two issues. Others restored to normal health and strength by such and by other means after suffering from pulmonary tuberculosis have likewise suffered. I have known a few Some of them are specially gifted persons who would perhaps have filled other distinguished positions in their profession had they not been struck down by tuberculosis early in their career They have gained thereby experience which has befitted them for working as tuberculosis specialists Moreover, after recovery their example in such fields of work is of great moral encouragement to their patients. The public tuberculosis service should welcome them so long as the public convenience and purse is duly safeguarded. But surely that can be done without imposing so rigid a scheme for superannuation as your correspondents describe? I hope the authorities will get things altered either by arranging for a more enlightened and elastic method of passing applicants into the service, or, if necessary, by getting the law altered. The first method requires either a wider-spread knowledge about the cure and prognosis of pulmonary tuberculosis amongst those doctors who may be called upon to examine applicants or their examination alone by experts already possessing that knowledge The second method could be inaugurated fairly easily by specialist physicians and actuaries consulting together to devise a plan which would be fair to all I am, Sir, yours faithfully,

Mundesley, Dec 3rd S VERE PEARSON

To the Editor of THE LANCET

SIR,—I have much sympathy with your anonymous correspondents; it does seem a pity that the community should not have the benefit of the special qualifications for diagnosing and treating tuberculosis which those who themselves have suffered from it have acquired. The more so since the tuberculosis service does *not, except occasionally, attract* the ablest young men of our profession, unless they themselves have the misfortune to develop tuberculosis On the other hand, one can appreciate the reasons underlying the exclusion. A person who has suffered from tuberculosis of the lungs is a risky life, as the attitude of life assurance companies testifies, he cannot be said to have his full working capacity restored for several years, if ever *It is not so much a question of reduction below normal* working capacity as a reduction of the margin of safety, which becomes apparent only in times of pressure Who is to bear the extra risk, the employer or the employee? In most cases, the latter—at any rate when he is seeking a job—is prepared to carry it if machinery could be devised to enable him to do so

Your correspondents assign as the main difficulty the pension schemes of the local authorities, but this is much less of an obstacle than the provision made by most county councils for payment of salary for periods of sickness during service. Pension benefits seldom become available until after ten years' service If an A P. case has survived for that period, he has become a very small risk, and in any case his pension depends on the number of years he has served. But if during his early years of service the employing council has to pay full salary during six months and half salary for other six months, as it may well have to do in the event of a breakdown of health, it will be chary of employing any more tuberculous persons

Unless it can be claimed that county councils have a philanthropic duty—a duty outside the ordinary canons of good business—to employ sub standard or damaged lives, the tuberculous applicant for employment must be prepared if called upon to bear the extra risks himself. He may be fortunate enough *to get* an insurance company, no doubt at an increased premium, to accept him for a sickness policy, but in any case he would be wise in applying for employment under a local authority to offer to accept, in view of his health history, the conditions of service usually prescribed for temporary staff At the end of, say, five years of good health he would have a strong case to be accepted for the privileges of permanent status —I am, Sir, yours faithfully,

JAMES WATT.

King George V. Sanatorium, Godalming, Surrey, Dec 3rd

ULCERATION FOLLOWING GASTRO-JEJUNOSTOMY

To the Editor of THE LANCET

SIR,—In your correspondence columns Mr M. J Smyth calls attention to a case of ulceration of the duodenum after the performance of gastro-jejunostomy and goes on to say, "I considered the condition extremely rare for I had nowhere seen any mention of a similar case" Whilst the persistence or recurrence of an ulcer in the duodenum after gastro-jejunostomy is unusual it is not quite so rare as this Sir John Bland-Sutton reported *three cases in* 1916, Borzeki two in 1921, and Maier one in 1922, all of which are mentioned in my book "Gastro-duodenal Ulceration," published in 1926 I reported also another example which had come under my personal notice, and in addition I have notes of three other cases upon whom I have operated.

As Mr. Smyth says, the occurrence of gastric and duodenal ulcers in combination is not so uncommon; *but he does not represent the facts* quite fairly when he says German surgeons have adopted gastrectomy in preference to gastro-jejunostomy as a treatment for duodenal ulcer What they have really done is to substitute resection of the duodenum with a part of the stomach (duodeno-gastrectomy) for gastro jejunostomy It is true that Finsterer introduced resection-exclusion for non-resectable duodenal ulcers —i e, *removal of the pyloric part of the* stomach leaving the duodenal ulcer in situ—but he never advocated it as a routine, for the results are not so satisfactory as when the duodenal ulcer itself is removed He regards it only as a procedure imposed upon him in the face of insurmountable technical difficulties

The real value of duodeno-gastrectomy for duodenal ulcer is not appreciated in this country The strongest advocates of gastro-jejunostomy are surgeons who do not practise the other operation If they did and compared their results they would unquestionably discover the greater efficacy of duodeno-gastrectomy

The different standards of cure adopted by surgeons who publish their results is a great cause *of error* in assessing the merits of the two operations The resection operation is a tedious technical procedure and perhaps associated with a greater risk (my mortality has been over 4 per cent in 113 cases), but is it too much to hope that this can be reduced, as was that of the lesser operation? It anyhow eliminates the mortality of operations for gastro jejunal ulcer, and the immunity from digestive disturbance of any kind is certainly greater after the duodenum has been resected

I am, Sir, yours faithfully,
CHARLES A PANNETT
St. Mary's Hospital, W, Dec 3rd

CLINICAL SENSE AND CLINICAL SCIENCE

To the Editor of THE LANCET

SIR,—In his recent presidential address to the Royal Society Sir F Gowland Hopkins discussing the endowment of medical research, had occasion to refer to the faculty which is commonly if rather vaguely, described as "clinical sense." He quoted, in passing, the following sentence from an article once published in the *Times*. "The older physicians with minds undisturbed by a crowd of scientific facts developed a clinical sense, *sui generis*, as subtle as the sense of taste or the sense of smell and it was on this sense that the great school of English medicine was founded" We cannot, I think, accept this dictum or continue to subscribe to the view that there exists some indefinable "intuition" or "flair" peculiar to and only discernible among those who practise medicine There are still, it is true, those who speak with admiration of the "clinical sense," as though it really were a special sense manifest in certain chosen teachers or wise practitioners There are, on the other hand, more critical folk who speak deprecatingly of this sense as though it were something illusory or, at the best, a species of guesswork employed in conjunction with physicianly sympathy and understanding In point of fact it is something much better and more worthy of analysis than either of these

Those who have witnessed in their own teachers or colleagues the use of what we will continue to refer to as "clinical sense," and those who have been at pains to review their own achievements and judgments due to its possession in however humble a degree, will, I believe, agree with me that the attribute is not something innate or intuitive, but a complex faculty based largely upon prolonged training and exercise of the known special senses. Observational ability, the observational habit, observational accuracy, and a retentive memory for observed phenomena together with an aptitude for quick sifting or correlation of experiences are the real ingredients of "clinical sense" The fact that it may, on occasion, lead to surprisingly swift and exact judgments is [illegible] responsible for the view that these judgments are an expression of some separate and peculiar faculty. "Clinical sense," in brief, is based upon ordered intellectual processes applied to the methods of science. When a biologist through long observational training, through experiment or through some combination of these formulates an important conclusion we do not say "what a wonderful biological sense he has", we merely regard him as a good scientist The biologist only differs from the physician in so far as he is able to record his observations and to explain his mental processes as he goes. The physician is constantly confronted with nature's experiments enacted before his eyes in the shape of human reactions to disease. Through the great complexity of his problems, through the exacting and distracting character of his professional life and the necessity of earning a living, through lack of leisure for collecting and analysing his experiences, he is commonly prevented from giving the fruits of his observations to the world and from subjecting his material to critical review. He has to content himself with contributions which may be compared rather with those of the field naturalist than with those of the scientific biologist

Sir Thomas Lewis and the Medical Research Council have been anxious to improve the opportunities for undisturbed observation and experiment in the clinical field, and although some of us remain uncertain at present as to the best method of selecting and training workers in that field, we have little doubt that a better endowment of clinical science (the study of man in disease), as distinct from physiology and pathology, was long overdue The great school of English medicine was founded not upon a sixth sense or the vague intuitive reactions of the older physicians but upon their steady application of the observational method to the study of disease, later correlated, whenever possible, with the results of parallel experiment and morbid anatomical study English medicine will be the better maintained in its greatness if opportunities are given to picked men to escape the burden of practice and to devote themselves (as physiologists, pathologists, and biochemists in their several departments are already able to devote themselves) whole-heartedly to the study of their subject Physiology and pathology live aloof from the bedside and have little present contribution to make to the investigation of symptoms and the living phenomena of disease.

The thoughtful modern physician, so far from having his mind "undisturbed by a crowd of scientific facts," is constantly disturbed by their very multiplicity, and believes that, with better opportunity, he could make contributions as valuable as those of the laboratory scientist to one of the most necessary of all the sciences—the science of human biology. His material is unlimited, he is constantly irritated by problems calling for solution, but his inqu[illegible] faculty is as constantly hampered by the claims of practice, by teaching, and by fatigue. His "clinical sense" frequently brings benefits to his patients but rarely to his science —I am, Sir, yours faithfully,

Wimpole street W Dec 2nd JOHN A. [illegible]

ANTIMENINGOCOCCUS SERUM

To the Editor of THE LANCET

SIR,—The leading article in your la[illegible] treatment of septicæmia contains the [illegible] words "The effect of meningococcal serum [illegible] does not depend, so far as is known, [illegible] toxic property " May I [illegible] statement is at direct variance [illegible] gained at the Central Laboratory [illegible] cerebro spinal fever among [illegible] four years of the war? The [illegible] was as follows —

At the beginning, in the [illegible] sera available for use in the [illegible] value and the mortality [illegible] the country who were [illegible] cerebro-spinal fever was [illegible] In the following [illegible] the late [illegible] of the laboratory [illegible] London district [illegible] physiologists of [illegible] of serum available [illegible] one [illegible] employing this serum, while the mortality in other districts remained at the previous level of approximately 50 per cent , Flack and his clinical colleagues succeeded in bringing the mortality in the London district down to 18 5 per cent Unfortunately, *further batches of serum supplied* by the same maker were found to have no therapeutic value, and accordingly, an intensive investigation was undertaken at the Central Laboratory in order to discover, if possible, the particular quality on which the potency of the successful serum depended A large amount of "dud" serum was available for comparison, and two phials of the good serum were reserved for this assay. None of the ordinary specific antibodies beloved by academic serologists and paraded in the text-books were found to be of the slightest clinical value, for several of the "dud" sera possessed them in good quantity.

Eventually it came to light that the quality that distinguished the therapeutically potent serum from the rest lay in its capacity to neutralise the endotoxin of both Type I and Type 2 meningococcus, the chief strains then operating At this point the potent serum that (thanks to Martin Flack) was in use in the London district became exhausted, and those in clinical charge at the special military hospital in Fulham for dealing with C S F cases were in despair because healthy young soldiers of the finest physique—mostly guardsmen—were dying at the rate of 50 per cent. A search was made through the large stores of serum at the R A M College and samples from 20 different batches of antimeningococcus serum were examined Two batches only were found to contain anti-endotoxin, and some of this antitoxic serum was sent at once to the London District C S F. Hospital with the result that its therapeutic potency was fully endorsed; the mortality being reduced to 15 per cent

In view of this experience it was clear that if the best therapeutic results were to be secured the preparation and standardisation of the serum must be undertaken by the Central Laboratory. The War Office and the Medical Research Council gave every possible help, and Dr Stanley Griffith, of the field laboratories at Cambridge, undertook the preparation of the serum. The Army Veterinary Department supplied excellent horses and fodder In order to study the matter on scientific lines monotypical sera were prepared, and no serum was sent out for clinical trial until it had been proved at the Central Laboratory to contain anti-endotoxin to the particular type concerned All serum that failed to do this was poured down the sink As the frequency of the various types operating was known, a pooled serum was made for use in cases where the particular type present was not known. The tested serum was at first put in the hands of six selected clinicians who were known to be particularly efficient, and later it was supplied for general use in the army The results were most encouraging. The gross mortality among troops fell to 35 per cent. at a time when the mortality from the same disease among men of a similar age-period in the civilian community remained at 58 to 60 per cent as in the previous years

The greatest success, however, was obtained in case of Type 1, the chief epidemic strain of the meningococcus and perhaps the most fatal one This strain had been in chief prevalence during the rising curve of the epidemic in the early months of 1915 Out of 65 cases due to Type 1 of which 48 are regarded by experienced clinicians as "fulminating, severe, or very severe," no less than 59 recovered. This serum moreover was clearly antitoxic in its action, for the clinicians observed striking and definite improvement in the condition of the patients in some cases within half an hour of its administration. It was found that the simplest and best way to prepare the endotoxin of the meningococcus for the purpose of standardising the serum was first to test strains as soon after isolation as possible on mice intraperitoneally and to select the most pathogenic ones Old cultures were of no use. Fifty or a hundred plates of pea-extract agar enriched with 5 per cent rabbit blood in saline lysed by the addition of ether were then made, and after 18 hours' incubation at 37° C , the growth on each plate was washed off in a minimum amount of saline, examined microscopically, then concentrated by centrifuge, and dried overnight in Petri dishes in an ordinary vacuum desiccator *in the* 37° C *incubator*. The dried powder thus obtained was found to be fatal to mice intraperitoneally in a dose of 2 mg , but when left in contact with 0 5 c cm of the potent serum for half an hour at 37° C. this dose was rendered innocuous. In similar tests with therapeutically inert serum the mice were moribund or dead within 48 hours

Further details may be seen in Special Report No. 50 of the Medical Research Council's series, or in the pathology volume of the "Official History of the War." I am, Sir, yours faithfully,

St Bartholomew's Hospital, Dec 2nd. M. H. GORDON

TUBERCULOSIS AMONG NURSES

To the Editor of THE LANCET

SIR,—In your leading article of Sept 8th on this subject (p 550) you quote from an article of mine, published in *Tubercle* (1933, xv , 59) In commenting on the incidence of tuberculosis among nurses, said to be between 1 and 6 per cent , you observe that it is necessary also to know the incidence among the young adult female population. You add that few have attempted to give this, and that I found the incidence in nurses not to be above the general average This is hardly the case It is true that I found a similar incidence of phthisis among 264 nurses admitted to hospital and among 250 general admissions of women of similar ages, but compared with groups of women of the same age and antecedents nurses come off far worse Among 112 massage students in eight years there have been no cases of phthisis, among 511 home science students in 21 years 3 cases, and among 502 female training college students in four years 1 case

My committee was perfectly satisfied that nurses are directly infected by patients, and we concluded that

> "the young girls from whom these groups of students and nurses are drawn preserve excellent health as long as they are subjected only to healthy conditions, but if they are exposed to massive infection with tuberculosis, all of them become at least Pirquet positive, and a proportion of them, estimated at 3 per cent per annum, become clinically tuberculous before their training is complete"

I am, Sir, yours faithfully,

Dunedin, N Z , Oct 23rd. D W. CARMALT JONES

SMOKE ABATEMENT

To the Editor of THE LANCET

SIR,—In a leading article in THE LANCET of Nov. 17th it is stated in reference to the making of by-laws under Section 2 of the Public Health (Smoke Abatement) Act, 1926, that "no local authority has yet had such by-laws confirmed" Cardiff city council adopted a by-law on July 11th, 1927, in the following terms —

> The Lord Mayor, Aldermen and Citizens of the City of Cardiff acting by the Council do by this by-law prescribe that the emission of black smoke for a period of two minutes in the aggregate within any continuous period of thirty minutes from any building other than a private dwelling house shall until the contrary is proved be presumed to be a nuisance.

This by-law was confirmed *by the* Minister of Health on Oct. 17th, 1927, and has since been enforced It is, of course, a form of by law which had been in existence in many other towns before the Public Health (Smoke Abatement) Act, 1926, was placed on the Statute book, but I believe that more recent by laws have been approved only with three minutes emission per half hour substituted for two minutes The epithet "black" is also always insisted upon, although Section 2 of the Act would appear to allow some latitude as regards the density of smoke for by law purposes

It appears to be true, however, that no local authority has so far been allowed to exercise its power to make by laws for requiring new buildings, other than private dwelling houses, to have such arrangements for heating or cooking as are calculated to prevent atmospheric pollution, a power conferred upon them by Section 5 of the Act

I am, Sir, yours faithfully,

Cardiff, Nov 28th RALPH M F PICKEN

DETECTION OF THYROTOXICOSIS

To the Editor of THE LANCET

IR,—Several interesting points are raised by Brazier in your last issue Experience has wn that the clinical value of any test for thyro icosis may be gauged by its specificity in border- e cases There can be no difficulty in diagnosing ically by inspection, the typical case of Graves's ease, in which the basal metabolic rate and pedance-angle values are both altered On the her hand in obscure cases where the basal metabolic e and impedance angles are within normal limits, r experience in diagnosis agrees with that of Mr ll who remarked in your columns a fortnight ago at "the method of checking B M R estimations fore and after 'saturation' of the patient with dine will prove in the long run to be infinitely ore exact than any other test at present ailable" Impedance-angle determinations, as we ve reported, do not alter with iodine therapy his fact unfortunately precludes the use of impedance gle measurements in an investigation of this kind

Although little use is made of them in this country, tisfactory techniques are available for the determina-on of the basal metabolic rate on out patients.

We are, Sir, yours faithfully,

J D ROBERTSON,
A T WILSON

Courtauld Institute of Biochemistry Middlesex
Hospital Medical School W Dec 1st

PROTEIN SHOCK THERAPY IN TYPHOID

To the Editor of THE LANCET

Sir —May I, through you, ask Dr C F Price to good enough to give us further information about the results of this treatment in typhoid I draw the conclusion, rightly or wrongly, that the fatality of typhoid cases treated in this way by him and Dr [illegible] has been zero or nearly zero Is that correct? I should like to see reports of a series of cases in sufficient numbers and of the same clinical character, treated by protein shock and not so treated, the typhoids should be distinguished from the para typhoids At the present time, fortunately for us, enteric fever is not frequent enough in this country [illegible] to be possible to obtain here the information asked for Some years ago I treated a few cases by what would now be recognised as protein shock and found that the effect in any given case could not be foretold In some cases it appeared to be good, in others it was indifferent but not harmful (see "A Text Book of Infectious Diseases" p 658) I think that according to Dr Price's experience I did not give the protein in large enough doses nor by the best, that is the intravenous, method assuming that the intravenous injection does produce the results claimed for it —I am, Sir, yours faithfully,

Hampstead Dec. 3rd E W GOODALL.

INTRAVENOUS ALCOHOL AS AN ANALGESIC IN LABOUR

To the Editor of THE LANCET

SIR,—May I suggest a possible method of shortening and rendering painless the second stage of labour? It is to inject at the onset of this stage alcohol into the median basilic vein of the arm in sufficient quantity to cause definite intoxication with possibly a subsequent light coma By using this route instead of the oral one only a small proportion of the alcohol given would pass through the liver which may be sensitive to any form of toxins during pregnancy The advantages would be —

(1) Efficient analgesia for a sufficient period of time to complete labour in an uncomplicated case The efficiency of alcohol as an analgesic is amply demonstrated in the out patient department of a general hospital where the broken leg of an intoxicated patient may be placed in plaster of Paris without complaint

(2) A shortening of the second stage of labour through the temporary depression of the higher psychical centres associated with fear and nervousness, enabling the expulsive mechanism to act more efficiently

(3) A post-partum partial amnesia of the second stage

The possible disadvantage of an increased excitability and restlessness in a certain type of patient would be outweighed by the advantages The quantity dilution, and technique of injection would require preliminary research

I am, Sir, yours faithfully,

Woodlands road S W, Nov 29th. S C S COOKE

SERUM PROPHYLAXIS AND PUERPERAL SEPSIS

To the Editor of THE LANCET

SIR,—The persistent high mortality from puerperal sepsis has made even the most complacent advocate of normalcy in parturition dubious Is it too much to hope that it may do more, that it may induce the medical man to view pregnancy in the civilised woman as a morbid state? For that, to the immunologist, is what it is Pregnancy lowers a woman's resistance to all infections, it prepares her for the streptococcus

The outset of the last general war found medical opinion prepared to accept tetanus complicating war wounds as inevitable for not until 1915 was antitetanic serum used prophylactically in all cases, and the case-mortality reduced from 53 to 22 per cent To day any lacerated street wound is treated with antitetanic serum, and frequently anti gas gangrene serum, although the risk of these complications is slight But the lacerated wounds of parturition, with their high menace of streptococcal sepsis, find the doctor in a state analogous with that of the war surgeon of 1914; and streptococcal antitoxic serum, universally administered to the moribund infected, is withheld from the potential victim at a stage when it would certainly do good There is a story of Pasteur, facing a meeting of obstetricians, then as now discussing puerperal sepsis 'But I do know what causes it' he said, and showed them a streptococcus The bacteriologist is still showing them streptococci and has indeed found many new types. But he has also produced antitoxic serum. Antitoxic serum administered to a rabbit is a complete protection against streptococcal toxin and a very marked inhibitor of streptococcal infection if administered at the time of injection of toxin or streptococci It is useless if administered an hour or two later. Antitoxic sera are not therapeutic; they are all prophylactic; they prevent further damage

Puerperal sepsis is commonest in first labours and in obstetrical complications with instrumentation. It is quite plain that "cleanliness" and "sterility" will not prevent it, for some obstetricians at least must be clean and sterile, and puerperal morbidity shows no decline. It is not the obstetrician who is to blame; the pregnant woman is a potential septicæmic, to precisely the same degree that the war-wounded man is a potential tetanic. The right procedure is perfectly obvious, has in fact been advocated many times in your columns, and has been employed in pathetically few cases It is to inject 10 c cm of antitoxic serum into every woman at the onset of her first labour, and into every woman with obstetrical complications Later, it might be extended to all women in labour; that is too much to hope for at present But nothing except a large-scale experiment will prove or disprove the value of the serum prophylaxis of puerperal sepsis It is for that reason, Sir, that I write to ask for greater attention to be paid to the most promising prophylactic method at present available —I am, Sir, yours faithfully,

London, Nov 28th R. J. V PULVERTAFT.

HARVEY MEMORIAL TOWER

To the Editor of THE LANCET

SIR,—The response so far to the Appeal, which was circulated at the beginning of November to every member of the profession with reference to the above memorial, has not been sufficient to warrant the committee taking any steps at present to complete the building of the Harvey Memorial Tower.

As it was our earnest hope to do so early in the New Year, may I ask those who have not yet contributed to kindly send a donation made payable to the Harvey Memorial Tower, and addressed to me at the Royal College of Physicians, Pall Mall East, S W.1 I am, Sir, yours faithfully,

G. DE BEC TURTLE,

Nov. 28th. Hon Secretary, William Harvey Memorial.

DOGMA AND RESEARCH

To the Editor of THE LANCET

SIR,—I wonder if you will grant me space for a disclaimer, the need for which arises out of a review in your last issue of the well-known "Mothercraft Manual"? When referring to the diet of young children which the authoress recommends, your reviewer mentions that meat is not included until the child reaches two years of age. This, he says, may not find favour with those who are described as my "disciples." The existence of any such people is, of course, a figment of your reviewer's imagination; and though the word may have been used with kindly intention it conveys the unpleasant suggestion of my connexion with some sort of sect, occupied perhaps with the propagation of dogma, and all its attendant disadvantages It is against this that I ask you to allow me to protest

Lest it should seem I am unduly touchy, may I explain that the existence of a tiresome sectarianism has greatly hampered the progress of what is known as "child welfare work," and I have always done what I could to combat it It is not much, I fear; for it is still the case that, when some point in the feeding or upbringing of a baby is to be discussed, the doctor quite commonly has first to pass the test (a test which parents and nurses claim the right to put) of whether he *believes* in Dr. X, or subscribes to the infallibility of all that Dr Y. has laid down Indeed only a satisfactory declaration of conformity may allow the consultation to take place at all Yet the point at issue may well be one which calls emphatically, not for belief, but for research Witness the recent findings of Dr Helen Mackay on the prevalence of anæmia in infancy While researches of that quality are still so few it is the dogmatists who flourish, not the babies.

It is true I have put on record the quite common place observation that many babies, while still under *a year of age*, will chew a piece of meat with manifest pleasure Having watched the progress of such babies it seems to me that they derive more good than harm from the practice To me its interest lies in the fact that what are often thought to be trivial points in dietetics sometimes turn out to contain factors of much significance Whether the inference drawn from this observation holds good for most babies will not be established by its mere restatement, nor refuted by denunciation Its truth or falsity, and any importance arising from it, will only appear if other observers care to make impartial records. Should that happen, and should the verdict be in accordance with my impression, it may yet be found of sufficient interest to gain inclusion in some future edition of the famous manual on mothercraft

I am, Sir, yours faithfully,

HAROLD WALLER

The Royal College of St Katharine, Bromley Hall,
Poplar, E, Dec 3rd

*** We can hardly regret having given Dr Waller occasion for so spirited a protest —ED. L

BECONTREE AND DAGENHAM

To the Editor of THE LANCET

SIR,—In your review (Nov 3rd, p 991) of my social survey report—which is one of the most useful (to me) that it has been my good fortune to read—it is stated that "the favour shown to prospective tenants suffering from tuberculosis gave rise to an unusual demand for special treatment for which little provision was made" The Essex county council provides the treatment for the area and although I have little doubt that your reviewer has infinitely more knowledge of the provision made in other areas than I have, I am wondering whether or not his criticism is entirely justified There is a tuberculosis officer for this part of Essex, resident at Ilford; clinics are held regularly at Dagenham, and the Essex county council maintain a number of beds and places for adults and children suffering from tuberculosis at various sanatoria and hospitals, the majority of which are in their own area On the other hand it is true that the supplementary services provided by voluntary agencies—the tuberculosis after-care associations—are very hampered by lack of funds, particularly in Dagenham, although even there the Essex county council pay the administrative expenses I am, Sir, yours faithfully,

London, N, Nov 28th TERENCE YOUNG

*** The sentence quoted was not meant in any way as a *criticism of the provision made by the* Essex authorities for the treatment of tuberculosis or as a comparison with the provision made elsewhere The case was cited as an illustration of the difficulties of providing social service in so short a time to cope with the unusual burden imposed on the Essex council by the L C C's method of choosing tenants—for which the L C C. appears to have made no special provision —ED. L.

ELECTRICAL CHANGES IN THE CEREBRAL CORTEX

To the Editor of THE LANCET

SIR,—Some recent newspaper articles have given a sensational account of the investigations which we have made in Cambridge on the electrical changes taking place in the cerebral cortex. In these articles we are deeply concerned to find ourselves credited with the discovery of the rhythm which can be detected from the human brain by electrodes applied to the scalp. This is an important discovery but it was made six or more years ago by Prof. Hans Berger, director of the Psychiatric and Nerve Clinic at Jena, and has already formed the subject of eight papers by Prof. Berger. We have repeated and confirmed many of Berger's observations; our interpretation of the rhythm differs in some respects from his, but we wish to make it clear that our own work is of recent date and is in the main confirmatory, whereas Berger has already made a detailed study of the cortical rhythm in a very large number of subjects and has shown the effect of mental work, external stimuli, sleep, drugs, &c. We hope that a forthcoming paper by us in *Brain* will remove the impression that we are in any sense the discoverers of the Berger rhythm and of its modification by mental processes.

We are, Sir, yours faithfully,
E. D. ADRIAN.
BRYAN H. C. MATTHEWS.

Physiological Laboratory, Cambridge, Dec. 3rd.

MEDICINE AND THE LAW

An Impostor's Punishment

Though Eric Ronald Cox, aged 45, was put away for three years by Mr. Justice Goddard at West Riding assizes last week for frauds upon doctors, a brief account of his technique may be useful, especially if it be true, as Cox is said to have told the inspector that doctors are the easiest people in the world to gull and that they never refuse to give assistance. Cox, who is described as a male nurse (this name is not on the State register) called on a medical practitioner at Hull last August and said he was a doctor and that his name was "Anderson"; he showed a letter purporting to have come from one of the professors at Edinburgh University whom he was on his way to see. He said he was suffering from cancer, and his use of medical terms supported his deception. He asked for something to relieve his pain and was given 5 grains of [illegible]. Next day the medical practitioner gave him a note to a chemist, requesting the latter to supply the bearer with such morphia as he required. The chemist telephoned to the practitioner and on his prescription supplied Cox with 12 one-grain tablets. A few days later Cox went to the surgery of another doctor at Leeds and told the same story. The doctor advised him to go into Leeds General Infirmary and, believing him to be in distress, gave him 5 [illegible] member of the staff of St. James's Hospital, Leeds, said he examined Cox and found no cancer in the [illegible] indicated. Dr. Brisby, medical officer of [illegible] Prison told the court that he had some doubt whether Cox was a drug addict or not. Though he had said he had taken 6 to 8 grains he had [illegible] none while in prison. The detective in charge of the case said that the accused came out of prison last April after serving a sentence for a similar offence. It was his practice to represent himself as a doctor and he picked up his medical knowledge by reading books. He represented himself as a drug addict in order to get morphia. His present sentence of three years' penal servitude [illegible] relieves members of the medical profession of a pest and impostor. If a caller apparently about 45 years of age tries them with this story towards the end of 1937 and after they should not forget to make full inquiry.

Verdict of Neglect against Herbalist

At an inquest at Battersea last week upon the death of the wife of James Ballard, a herbalist, of Gassiot-road, Tooting, who died a few weeks after her marriage, the jury returned a verdict that death was due to strangulated hernia and was accelerated by her husband's neglect, but that the neglect did not amount to gross neglect. The husband said he had treated his wife for rupture; she had made him promise on their marriage that he would never call in a doctor. Sir Bernard Spilsbury said the strangulated hernia had been progressive [illegible] more serious for the last five days. An operation could have cured her up to the last day; probably by that time the position was so serious that operation might have been risky. Strangulated hernia unrelieved by operation was bound to be fatal. Possibly in the earlier stage manipulation might have reduced it; otherwise an operation was the only possible cure. The proportion of cures was large—something like 90 per cent.—where operation was performed early. Apparently the herbalists seized the occasion to advertise an appeal for funds to establish a London herbalist hospital where treatment would be given free to the poor. The coroner said that he had received a large leaflet in this connexion and that another was decorating a motor-car in the street outside the court. He regarded the proposal as a retrograde step of a disastrous character. People could not properly treat disease without the knowledge obtained by adequate training in medicine. However excellent their intentions, people without proper medical education would be working in the dark.

Swab Found in Small Intestine

An unusual theory was advanced at a Hull inquest on Nov. 27th to account for the presence of a swab in the patient's abdomen. He underwent an operation last August on admission to hospital with peritonitis and appendicitis. The operating surgeon thought he would not recover, but, after a week's serious illness, he made progress and before he left hospital he was walking about with the wound healed. He was readmitted on Nov. 21st, complaining of severe pain. Operation disclosed a kink in the small intestine from which a swab was removed; the patient died next day. Dr. Macrae Tod, medical officer at the Anlaby-road Hospital, Hull, said that, improbable as it might seem, the swab might have been swallowed. There was nothing in the previous operation that necessitated the use of the swab; it could not then have been put in the position in which it was found, since there was no sign whatever of a breach in the wall of the bowel. There would not have been convalescence after the first operation if the swab had then been in the abdomen. Dr. Philip [illegible], assistant medical officer who had made a pathological examination suggested that the swab had been swallowed within 48 hours of the second operation or less. After other evidence the coroner said the swab might have [illegible] with the kink but was not the direct cause of the obstruction He was satisfied that the swab was not left in the abdomen at the first operation and that its presence could not be associated therewith. An open verdict was recorded.

Murder "in Mercy"

In a pathetic case at Leeds assizes Mrs Brownhill was found guilty of murdering her 30-year-old imbecile son She had devoted her life to him day and night, everything had to be done for him, and she did it She was herself ordered to undergo an operation last September, she knew it would be serious, but she said she would not mind, except for her son One evening the son did not appear and Mrs Brownhill said, "I have just put him to sleep; I gave him 100 aspirins and then placed the gas tube in his mouth" There was no prospect of the charge being reduced to manslaughter, nor was there any chance for a plea of insanity, and Mr Norman Birkett's eloquence in defence was presumably directed towards securing from the jury the strongest possible recommendation to mercy. This the jury gave It was obviously unthinkable that the death sentence should be carried out and the Home Secretary has already recommended a reprieve Mr Justice Goddard explained to the jury that the time may come when it may be the law of this country that an imbecile may be sent to a merciful death; that was not yet the law; nobody, not even a doctor, had the right to do what Mrs. Brownhill had done "Neither you nor I have the right to make laws, we must take the law as it is" Called upon after verdict and before sentence, Mrs Brownhill said, "I did it in mercy."

Dentist and Cosmetic Surgeon

An inquest was held at Paddington last week upon a woman who gassed herself in a London hotel apparently in disappointment at the non-success of beauty treatment which she had been undergoing Mr John Cornelius Bell, who had treated her, was asked by the coroner (Mr. Ingleby Oddie) why he called himself a qualified dentist and plastic surgeon when he had no surgical qualification Mr. Bell said there was no particular rule about it "Plastic surgery," said Mr Oddie, "is a thing which requires the highest form of skill, it means replacing noses and ears, you don't do that kind of thing, do you?" "No," said Mr Bell, "I do the rejuvenation part" Asked if he was not really a beauty specialist, he preferred to call his work cosmetic surgery He explained how he treated "dropped faces" by a slight incision alongside the ear and by drawing up the skin. He had given the deceased this treatment for a fee of 20 guineas He had afterwards given her treatment for baggy eyes, removing a little strip of skin to tighten up the face, his fee for this was 20 guineas He had also treated her for "falling in" of the gums under the nostrils, for this a compound was injected under the skin.

There is no need to take too seriously the cosmetic surgery of a Dentist 1921. The use of the description "surgeon," with whatever prefix, by a man who has no qualification in surgery is, even if technically legal, a matter of taste As for the law, it is perhaps relevant to mention Section 27 of the Dentists Act of 1878 which explains that a certificate under that Act gives no right to assume a title implying that the person named is by law recognised as a practitioner in medicine or general surgery. Section 4 of the 1921 Act prohibits the use of any title or description reasonably calculated to suggest that the person concerned possesses a professional qualification other than that which he in fact possesses. Section 4 (unlike Section 40 of the Medical Act) does not contain the words "wilfully and falsely." An anæsthetist assisting a dentist in cosmetic surgery might be regarded as covering an unqualified practitioner The "authority" for a registered dentist to be in possession of dangerous drugs extends only for the purposes of his practice as a dentist.

THE MEDICAL DIRECTORY

THE ninety-first annual issue reaches us in good time (Dec. 4th), and with a pleasant feeling of freshness, for the title-page and some of the earlier sheets have been reset in new type The directory now contains 57,128 names, being 649 more than last year. The distribution of practitioners follows the tendency of recent years: there are 154 more names in London and 507 in the provinces, while Ireland has dropped by 104; Wales has 6 fewer, and the Services 16 fewer. The maintenance of the position of the directory depends on its accuracy, and this issue shows no relaxation of effort in keeping every section scrupulously up to date, those who refer to it for the latest changes of address should not overlook pages 2210–13 containing alterations made after the rest of the directory had gone to press. But we cannot find any mention of the Post-Graduate School at Hammersmith, a big event of 1935, although it is given as the address in one or more entries. It is not the fault of the editors that the composition of the Dental Board is already out of date. We cordially commend the volume as a model work of reference The price remains unchanged at 36*s*.

THE MEDICAL REGISTER

ORDERS for the office edition of the Medical Register, 1935, at the special price of 10s. (post free) must be received not later than Dec. 31st. This office edition does not contain reprints of the Medical and Dentists Acts and other preliminary matter, but it includes the same entries relating to registered medical practitioners as are contained in the ordinary edition. The Council is also prepared to supply on application monthly lists of names added to, and removed from the Register. Particulars of the terms and conditions from the Registrar of the Council, 44, Hallam street London, W.1.

BRITISH INSTITUTE OF PHILOSOPHY.—An address will be given by Mr. H Levy, professor of mathematics at the Imperial College of Science and Technology, entitled Science and Philosophy in Nature at University College, Gower-street, London, W C, o Tuesday, Dec 11th, at 8 15 P.M Prof E A Milne wi take the chair Application for cards of admission shoul be made to the director of studies at University Hall 14, Gordon-square, W C.1

JEWISH HEALTH ORGANISATION OF GREAT BRITAI A course of five lectures will be given once a mont by medical men under the auspices of this organisation o Thursdays, at 8 30 P M, at Bayswater House, 11, Blenheim crescent, London, W The first lecture will be give by Dr Y Krupenia on Diseases Common Among Jew on Dec 13th A second series of lectures is being he at the same time on Mondays at the Synagogue Ha Harley-street, Bow, E 3, and the next lecture in th series, by Dr M. Mitman on Fevers their Danger an their Prevention, will be on Dec 31st The lectures a open without fee to all Further information may be ha from the secretary of the organisation, Woburn Hous Upper Woburn-place, W C 1

OBITUARY

AUGUSTINE GRIFFITH, M D Lond

Dr Griffith, who died at Bath on Nov 11th, aged 68, retired three years ago from his post as medical officer of health for Hove, which he had occupied for 32 years A student of University College, London, he graduated M B with honours in 1891 and proceeded later to the M D degree, taking also the M D (State Medicine) in 1894 Having chosen institutional work he was in succession assistant medical officer at the county asylum, Lancaster, and the borough asylum, Nottingham and later resident at the Nottingham Fever Hospital In 1899 he was elected to his position at Hove the only break in his long service occurring when he served three and a half years at Salonika Dr Griffith was both efficient and popular as M O H and was justly proud of the fact that his relations with his colleagues in practice were always cordial, a fact which was endorsed by a presentation made to him on his retirement

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WALTER GEORGE LOWE, M D Lond, F R C S Eng

Dr W G Lowe, whose death took place at the advanced age of 86 at Birchington on Oct 21st, was born at Burton on-Trent, the scene of more than 50 years of his professional life Son of Dr George Lowe of that town, he was educated at the local grammar school and at Epsom College, proceeding for his medical training to St Bartholomew's Hospital He graduated in London in medicine in 1870 and proceeded to the doctorate in 1876, having in the meantime obtained the Fellowship of the R C S Eng After holding house appointments at St Bart 's he joined his father and brother Charles in partnership at Burton, becoming surgeon to the infirmary He was put on the commission of peace and was prominent in local movements of benevolence and charity He was also an active churchman doing much voluntary work, and after he retired from practice to make his home at Birchington he became secretary of the parochial and a member of the diocesan council

THE LATE DR. STRICKLAND GOODALL

Dr Justina Wilson writes the following as an addition to the memoir published last week "As one who was privileged to assist Dr Strickland Goodall for over 14 years in his work in the out-patients' department of the National Hospital for Diseases of the Heart, I should like to add a few words of tribute to the memory of a man by whose death cardiology has lost a distinguished worker He was only 60 when coronary disease cut him off, after long months of suffering, nobly borne, and his untimely death is a deep sorrow to his friends, and a real loss to medicine The students of cardiology that he gathered round him at the Heart Hospital will never forget the inspiration of his teaching, his knowledge and his genius for diagnosis and prognosis, and his resourceful and fruitful methods of treatment His large practice included every class of society and all his patients loved him, for his deeds of kindness were countless He worked to the point of exhaustion and had no leisure for recreation, but after the most fatiguing day at hospital, he was neither impatient nor hurried He was always ready to give ungrudgingly to others from his storehouse of experience, his advice was always essentially practical It is a misfortune that he never had time to write the book that he had in mind "

Dr Alistair Sim Garden who died at Southport on Nov 10th, graduated in medicine at Aberdeen in 1906, and made a special study of obstetrics at the Coombe Hospital, Dublin He then went out to Ceylon where he joined the staff of the General Hospital, Colombo, and was acting also as anæsthetist As an officer in the Ceylon territorials on the outbreak of war he was given rank as temporary captain in the R A M C, and served in France until the Armistice, when he settled in Southport, devoting himself especially to midwifery and diseases of children He was obstetrician in charge of the Christiana Hartley Maternity Hospital and surgeon to the Bradstock Lockett Orthopædic Hospital for Children In his younger days Dr Garden was an all round athlete, representing the University of Aberdeen both in rowing and football

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Osteopathy Bill

On Wednesday, Nov 28th, in the House of Lords Viscount Elibank introduced a Bill for the regulation of the practice of osteopathy and to prescribe the qualifications of osteopathy practitioners The Bill was read a first time

Supply of Milk to Juvenile Unemployed Persons

In the course of the debate in the House of Commons on Dec 3rd on the second reading of the Depressed Areas Bill Mr Oliver Stanley, Minister of Labour, said that he had provided that the scheme for cheap milk which was now current in the schedules should be extended to the junior instruction centres There was the further proviso that in any case where a medical certificate was obtained—members would understand that, now that these boys and girls were brought into these centres, they must be able to have some medical control over them—of evidence of malnutrition, he had made arrangements that they should then be supplied daily with two-thirds of a pint of milk free

The Bill was read a second time by 273 votes to 50

HOUSE OF COMMONS

WEDNESDAY, NOV 28TH

Officers and Men Discharged from Army Medically Unfit

Mr Whiteside asked the Financial Secretary to the War Office the number of officers and men discharged from the Army as medically unfit during the last 12 months for which statistics were available and the number of those who were in receipt of pensions.—Sir George Penny (Comptroller of the Household) replied: Twenty-three officers were invalided from the Army during the 12 months ending Sept 30th, 1934 19 of these officers are in receipt of retired pay which, in eight cases, contains an element in respect of disability attributable to service As regards other ranks 1730 applications for disability grants were received during this period Pension was awarded in 310 cases and gratuity in 709 cases the bulk of the latter being cases not attributable to service

Mr Whiteside: In view of the apparent uncertainty which exists in regard to the payment of compensation consequent on dismissal through sickness will the hon gentleman convey to the Financial Secretary the desirability of taking steps to see that all men are made cognisant of this fact?

Sir George Penny: I will convey the request.

Milk for Schools in Lanarkshire

Mr. Anstruther-Gray asked the Secretary of State for Scotland when the scheme for milk in schools would come into full operation in Lanarkshire—Mr. Skelton (Under-Secretary of State for Scotland) replied: Lanarkshire Education Authority have decided to adopt the scheme for milk in schools. They are at present engaged in making the necessary arrangements with distributors and it is fully expected that the scheme will be brought into operation when the schools reopen after the Christmas vacation

Motorists and Pedestrian Crossings

Dr. Salter asked the Home Secretary whether he was aware that many motor drivers ignored the pedestrians' right of way on the uncontrolled crossings recently instituted, whether, seeing that such neglect or refusal to stop had resulted in the occurrence of a considerable number of accidents, fatal and otherwise, actually on the crossings themselves, he would give instructions to the metropolitan police energetically to enforce the regulations relating to crossing-places for foot passengers, and whether he would have plain-clothes constables employed with a view to detecting offenders and instituting prosecutions—Sir John Gilmour replied. Yes, Sir I am aware that all motor drivers do not yet conform with the requirements of the Pedestrian Crossing Places Regulations made by my hon. friend, the Minister of Transport, and that a number of accidents have occurred at uncontrolled crossings The metropolitan police have received full instructions on the subject of the enforcement of these regulations Some thousands of cases of infringement have been dealt with by warning and proceedings have been taken in cases where there was evidence of dangerous or careless driving The Commissioner has been giving close attention to this question The public have now had ample time to familiarise themselves with the requirements, and in the Commissioner's view—in which I entirely concur—the time has come when more active measures by way of prosecutions must be undertaken for securing compliance with the regulations In the plans which have already been prepared for this purpose plain-clothes officers in addition to uniform police will be employed

Replying to further questions Sir John Gilmour said that the whole question was being carefully considered and he would make no difference between pedestrians and motorists.

Disease-carrying Persons

Mr Temple Morris asked the Minister of Health if his attention had been called to the increasing number of so-called disease-carrying persons, whether he had any statistics on the subject, and what diseases could be carried and were carried by individuals—Sir Hilton Young replied I am advised that there is no evidence that the number of disease-carrying persons is increasing, but no doubt in recent years improvements in bacteriological and serological technique and their wider application in public health practice have enabled the presence of such persons to be more readily discovered No national statistics are available on this subject, but I understand that the results of many special inquiries, both at home and abroad, have been published I am advised that present knowledge suggests that most infectious diseases may be carried in this way

THURSDAY, NOV 29TH

Anti-gas Exercises for Children

Mr John Wilmot asked the Home Secretary whether his attention had been called to the fact that the Camberwell Division of the British Red Cross Society recently organised a gas-drill demonstration for children at which gas masks and smoke bombs were used, whether such exercises were being carried out with his knowledge and approval, and whether it was proposed to extend them—Captain Crookshank (Under-Secretary, Home Office) replied. My right hon friend saw an account in the press of a demonstration of this character to which no doubt the hon. Member refers Exercises in anti gas measures conducted by the British Red Cross Society do not require to be approved by my right hon friend, nor is he consulted beforehand My right hon friend has no information as regards the last part of the question.

Therapeutic Value of Waters at British Spas

Captain Erskine-Bolst asked the Minister of Health whether he would consider the desirability, provided no expense was involved, of causing a thorough examination to be made into the therapeutic value of waters at British spas with a view to giving official recognition thereto and thus discouraging the unnecessary use of foreign spas—Sir Hilton Young replied. Proposals on the lines of the question have already been made to me, but after full consideration I came to the conclusion that the suggested examination would make no substantial addition to information already available.

Free Milk for School-children

Sir R Aske asked the Parliamentary Secretary to the Board of Education whether he would consider the desirability of introducing legislation which would authorise local education authorities to provide free milk to children attending public elementary schools in all cases where the parents of such children had been unemployed for more than six months—Mr Ramsbotham replied As the existing law makes it possible to provide free milk for all necessitous children who are unable by reason of lack of food to take full advantage of the education provided for them my noble friend is not satisfied that it is necessary to introduce legislation which would enable free milk to be given to all children of parents who have been unemployed more than six months irrespective of the physical condition of the children. The Board have made it clear in their Circular 1437 that in their opinion children should be selected for the provision of free meals of milk who show any symptoms, however slight, of subnormal nutrition.

MONDAY, DEC 3RD

Proposed Census (1936)

Sir Arnold Wilson asked the Minister of Health whether it was proposed to make an Order in Council under the Act of 1920, for a census in 1936, and, if so, whether he would introduce legislation requiring local authorities to permit census service on the part of their officials as a condition of receiving further grants under the Derating Act of 1929—Mr Shakespeare (Parliamentary Secretary to the Ministry of Health) replied My right hon friend hopes to be in a position to make a statement on this subject in the near future

Inquiry into Death of Mrs. Taylor

Mr Rhys Davies asked the Minister of Health whether the report on the Mrs Taylor case, sent by him to the authorities in Manchester, was an exact copy of that received by him from his two investigators, and whether he would place a copy of the report in the library of the House—Mr. Shakespeare replied. The report sent to Manchester was the report submitted to my right hon friend for publication by the two investigators A copy is being placed in the library.

Maternal Mortality

Mr Herbert Williams asked the Minister of Health if he could furnish any explanation of the wide differences in the maternal mortality-rates of 1000 births in the following urban districts of not dissimilar characteristics: Rochdale, where the rate was 2 71, Huddersfield, where it was 8 81, Cardigan, where it was 9 60, and Merioneth, where it was 4 80.—Mr Shakespeare replied My right hon, friend is not at present in a position to explain these differences, but, as my hon friend is aware, special investigations are being directed into the circumstances of the areas where there is a persistently high maternal mortality-rate

Methylated Spirit Drinking

Sir Arnold Wilson asked the Home Secretary whether his attention had been drawn to the increase of convictions for drunkenness reported to have been due to the drinking of methylated spirits in England and Wales from an average of 407 cases for the years 1920 to 1933 to 596 cases for 1932 and 683 cases for 1933, whether legislative or other action was contemplated, and what had been the result of the experiment which was initiated on the 15th March last with the object of rendering surgical spirit undrinkable —SIR JOHN GILMOUR replied As regards the first two parts of the question, I am aware that the figures of convictions have increased in recent years, but I would point out that in 1933 they amounted to less than 3 per cent of total convictions for drunkenness No special action in the matter, so far as England and Wales are concerned, is at present contemplated by the Government. As regards the last part, no information is as yet available to indicate the effect of the new denaturant

TUESDAY, DEC 4TH

Children Leaving School and Health Insurance

Mr LLEWELLYN-JONES asked the Minister of Health whether he had considered representations from different organisations connected with the administration of national health insurance advocating that the National Health Insurance Act, 1924, should be amended so as to bring within its scope all children as soon as they left school and entered into insurable employment, and whether he was prepared to take any action in the matter —Mr SHAKESPEARE replied: I would refer the hon Member to the replies given on April 19th and July 17th last The hon Member can be assured that the matter is not being overlooked

MEDICAL NEWS

iversity of Oxford

n a congregation held on Nov 24th the following ees were conferred —

M.—H. W Allen
M —A. G Palin and Renatus Kempthorne

iversity of Cambridge

On Dec 1st, the following degrees were conferred —

D.—T G Reah
Chir —C E. P Markby and W F Richards

iversity of London

The Paul Philip Reitlinger prize, offered this year for best essay embodying the result of some research k on a medical subject, has been awarded to Edward ham Murphy, M Sc (Physiology), a student of University ege, for his essay on the behaviour of liver glycogen experimental animals The prize, of the value of £30, founded with funds given to the University by Mr ert Reitlinger in memory of his son, a student of dlesex Hospital medical school

On Nov 21st in the faculty of medicine W A Gray of versity College Hospital medical school was awarded degree of Ph.D in pathology

At recent examinations the following candidates were cessful —

D P M

E. McIlroy J H Malloy, and R. W Maxwell (with special wledge of psychiatry), and R M Norman (with special knowge of mental deficiency).

iversity of Dublin

At recent examinations at the School of Physic, Trinity ege, the following candidates were successful —

M CH

E. Ellison

AL EXAMINATION FOR THE M B , B CH , B A O (PART II)

Medicine —H D O Brien (passed on high marks) D J Doris F Morton, T D O'C Donelan C J Vaughan, Glover, H A. Wells, Joseph Sorett, Patrick O Brien R I R. S Jessop, F J B Convery, and C O Greer and J van Niekerk (old regulations)

Surgery —H D O Brien (passed on high marks) *Doris F* Mary F Mansfield Marie J S O'Toole A C Pilkington, I A. Walsh Sheila K Henderson H S J van Q Conolly T D O'C Donelan, A R S *Jessop* Harbinson, Patrick O Brien, C O Greer, D J haughnessy, and S M Freedman

Midwifery —J A I Moore J T Wellwood Maurice stein, D O Walker, J C Gaffney R. H Pratt J R L W M'Caughey, J R M'Ilroy D P Burkitt R L Oakes F J C Loughran, R C O Grady, Elliott Harold Pringle T S Dorman J R Kellett Wallace Maureen C L Gore Grimes R. A Bond, A. O Dwyer

graduate Courses in Berlin

ational courses are to be held in Berlin on the subjects: internal medicine (March 4th to 9th), eases of metabolism and of the glands of internal n (March 11th to 16th), radiology (March 18th to logy (March 25th to 30th) industrial disease 1st to 6th) surgery (April 29th to May 4th) Monthly es in all the special departments including practical will also be held Particulars of all these courses be had from the information bureau of the Kaiserin Haus, Robert Koch Platz 7 Berlin N W 7

Royal Faculty of Physicians and Surgeons of Glasgow

At the monthly meeting of the faculty, held on Dec 3rd, the following were admitted to the Fellowship John Glaister, M D (Glasgow), Farquhar Gracie, M B (Bearsden), David Lamb, M B (Glasgow), William Thompson Wotherspoon Paxton, M B (Glasgow), Horace Minton Shelley, M R C S Eng (London), and Hans Stubbe, M B (London).

Society of Chemical Industry

The food group of this society will hold a meeting at 8 P M on Wednesday, Dec 12th, at the London School of Hygiene and Tropical Medicine, Keppel-street, W C, when Prof E Waldschmidt Leitz, professor of biochemistry in the Deutsche Technische Hochschule of Prague, will lecture on recent developments in enzyme chemistry

Gifts to London Hospitals

According to the terms of the Bernhard Baron trust the sum of £36,970 was distributed to charities on Dec 5th, the late Mr Baron's birthday The grants include £14,380 to London hospitals, and £8865 to hospitals outside London The trust has also granted £25,000 towards the £250,000 required by St George's Hospital for its rebuilding scheme Mr E W Meyerstein has offered a second £25,000 and has made an appeal for eight similar gifts to make up the amount required

Joint Tuberculosis Council

At a council meeting held in London on Nov 24th it was reported that some grant would probably be available in aid of the work of the employment committee The committee investigating the results of artificial pneumothorax treatment had collected 4283 cases, but on actuarial advice they were rejecting series with more than 3 per cent of cases "lost sight of" This would leave some 3900 to analyse With the controls there were 7000 cards to be prepared and sorted so that it would be six months before a preliminary outline could be made The greater part of the meeting was spent in discussing a memorandum on the examination of contacts presented by Dr Ernest Ward Something should be done to meet the difficulty of young adult contacts who will not stay at home to be examined there, or attend a dispensary for the purpose On behalf of the milk committee, Prof W W Jameson recommended the Council to support the findings of the committee on cattle diseases of the Economic Advisory Council, but to oppose any suggestion that the Milk Marketing Board's scheme of accredited herds would do anything towards the production and distribution of a safe milk free from infection After discussion the Council reaffirmed its resolution of April 20th, 1934,

> that protection of the children from the risks of infection can be secured only by adequate pasteurisation or by boiling the milk and notes with every sympathy the corresponding advice given by the Board of Education and adopted by the London County Council and certain other education authorities under the expert direction of the corresponding medical officers of health.

A series of post-graduate courses are being planned for 1935, the chief one at Victoria Park Hospital on recent advances in technique in the diagnosis and treatment of disease of the lungs

A NEW nurses' home at Wrexham War Memorial Hospital has been opened by Lady Howard de Walden, with accommodation for 60 nurses in separate bedrooms

THE guild of the old patients of the Gordon Hospital for Rectal Diseases have shown their gratitude for restored health by presenting a cheque for £1000 towards the rebuilding fund

Aberdeen Medico-Chirurgical Society

At the annual general meeting of this society on Nov 22nd Dr. William Brown was elected president and Dr. H Edgar Smith secretary for the ensuing year.

West London Hospital

It is announced that this hospital is to be rebuilt at a cost of some £54,500 A start is to be made at once on the casualty and X ray departments, and on 'better accommodation for the medical and nursing staffs.

Guest Hospital, Dudley

The older portion of this hospital is to be demolished and a new administrative block erected in its place at a cost of £25,000. The old building is crumbling rapidly and much of it is supported in scaffolding

Cornelia Hospital, Poole

A new maternity ward was opened recently by Lady Carisbrooke Until a short time ago the ward was a converted army hut and the cost of the work is about £45,000.

Money from "Rubbish"

The sum of £900 has been raised by the Harrow and Wealdstone Hospital rubbish fund. Discarded clothing, furniture, newspapers, rags, bottles, jars, metal, or old iron are all collected by the hospital van

Demonstration of Medical Films

A demonstration of medical and surgical films will be given under the auspices of the Deutsche Gesellschaft für Wissenschaftliche Filme on Sunday, Dec 16th, at 11 A M at the Academy Cinema, 165, Oxford-street, London, W. The programme includes fertilisation and first segmentation of the rabbit ovum (Prof Fommolt, University Clinic for Women, Berlin); version and delivery in transverse presentations (Dr Schultze, University Clinic for Women, Berlin), tumours of the brain (Dr Albrecht, Nerve Clinic, Charité, Berlin), action of the heart (Prof Winterstein, Physiological Institute, University of Breslau), and cholecystectomy in empyema of the gall-bladder (Prof Kuettner, Surgical Clinic, University of Breslau) Members of the medical profession will be admitted on presentation of their visiting card.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Dec 10th
United Services 4 30 P M, Squadron-Leader E D D. Dickson The Choice of an Anæsthetic under Conditions of Active Service Col E M Cowell · New Methods of Front Line Evacuation of Wounded

TUESDAY.
Dixon Memorial Lecture 5 P.M, Sir Henry Dale, F R S Pharmacology and Nerve endings
Psychiatry 8 30 P M Discussion on Mental Hygiene Preventive Measures in Childhood, by Dr Susan Isaacs and Dr William Moodie. Members of the Section of Epidemiology and State Medicine are invited

FRIDAY
Clinical 5 30 P M (Cases at 4 30 P M) Dr W. M Feldman 1 Transposition of Viscera Dr Gerald Slot 2–3. Osteo-arthritis Treated by Epidural Injection Other cases will be shown
Ophthalmology 5 P M Clinical Meeting at the Central London Ophthalmic Hospital, W C. Cases will be shown

MEDICAL SOCIETY OF LONDON, 11, Chandos street, W
MONDAY, Dec 10th.—8.30 P M, Dr Basil T Parsons-Smith The Thyrotoxic Heart

SOUTH-WEST LONDON MEDICAL SOCIETY
WEDNESDAY, Dec 12th—9 P M, (Bolingbroke Hospital, Bolingbroke-grove, Wandsworth Common), Dr Z. Mennell and Dr M D. Nosworthy Ether is not Dead.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE 26, Portland-place, W
THURSDAY, Dec 13th—8 15 P M, Major H C Brown and Dr J. C Broom The Importance of Electric Charge in Certain Aspects of Immunity (preceded at 7 45 P M by a demonstration) Dr L W Hackett Some New Types of Eggs of *Anopheles maculipennis*

BIOCHEMICAL SOCIETY
SATURDAY, Dec 15th—2 30 P M (Biochemical Department, Johnston Laboratories, University of Liverpool), Short Communications and Demonstration

MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY
THURSDAY, Dec 13th—8 30 P M. (11, Chandos street, W), Dr. F. H Bodman Some Cases of Colitis

WEST KENT MEDICO-CHIRURGICAL SOCIETY.
FRIDAY, Dec 14th—8 45 P M (Miller General Hospital), Sir Humphry Rolleston The Shifting Sands of the Architecture of Medicine

PADDINGTON MEDICAL SOCIETY.
TUESDAY, Dec 11th—9 P M (Great Western Royal Hotel, Paddington), Dr R Galway Murray Rotary Movement and the Medical Profession

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St James' Hospital, Ouseley-road, S W
WEDNESDAY, Dec 12th—4 P M, Mr L Phillips Some Medical Aspects of Gynæcology

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn-fields, W C.
THURSDAY, Dec 13th—5 P M., Mr Victor Bonney Functional Derangement of the Intestine that follows Abdominal Operations (Bradshaw lecture)

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Dec 10th, to SATURDAY, Dec 15th—MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W Tues, 2 30 P M, Dr. A E Clark-Kennedy Ketosis Wed., 8 30 P M, Dr. Stanley Wyard. Diet in Gastric Disease —BROMPTON HOSPITAL, S W Wed and Frid, 5 P.M., Course in chest diseases—Courses, &c, are open only to members and associates of the Fellowship

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W
MONDAY, Dec 10th—10 A M, medical wards, skin clinic 11 A M, surgical wards 2 P.M, surgical wards, gynæcological wards, eye and gynæcological clinics
TUESDAY—10 A.M, medical wards 11 A M, surgical wards 2 P M, throat clinic
WEDNESDAY—10 A M, children's clinic 2 P M, medical wards, eye clinic. 3 45 P M, venereal diseases demonstration
THURSDAY—10 A M, gynæcological and neurological clinics. 11 30 A M, fracture demonstration 2 P.M, eye and genito-urinary clinics
FRIDAY—10 A M, skin clinic Noon, lecture on treatment 2 P M, throat clinic
SATURDAY—10 A M, children's and surgical clinics, medical wards
There will be no lectures at 4 15 this week

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL
WEDNESDAY, Dec 12th—3 P M, Mr D H Patey: Intestinal Obstruction and its Treatment in the Light of Recent Work

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W C
FRIDAY, Dec 14th—4 P M, Mr F W Watkyn Thomas. Infection of the Petrous Pyramid

CHARING CROSS HOSPITAL MEDICAL SCHOOL, W C.
SUNDAY, Dec 9th—10 30 A M, Dr Russell J Reynolds Radium Therapy 11 45 A M, Mr A C MacLeod Renal Tuberculosis

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL Denmark-hill, S E.
THURSDAY, Dec 13th—9 P M, Dr J A. Drake Dermatology in General Practice

BRITISH RED CROSS SOCIETY'S CLINIC FOR RHEUMATISM, Peto-place, N W.
THURSDAY, Dec 13th—8 30 P M, Dr M B Ray Baths in the Treatment of Rheumatic Diseases

BROWN INSTITUTION.
MONDAY, Dec 10th, and WEDNESDAY and FRIDAY—5 P M. (London School of Hygiene, Keppel street W C), Prof F W Twort Primitive Forms of Life

INSTITUTE OF HYGIENE, 28, Portland-place, W
WEDNESDAY, Dec 12th—3 30 P M, Dr Alfred Cox Future of Preventive Medicine

CHADWICK PUBLIC LECTURES
MONDAY, Dec 10th—5 30 P M (London School of Hygiene, Keppel-street, W C), Dr F R Seymour Men and Masses

ADDRESSES AND ORIGINAL ARTICLES

THE FUNCTIONAL DERANGEMENT OF THE INTESTINE THAT FOLLOWS ABDOMINAL OPERATIONS*

By Victor Bonney, M S , B Sc , F R C S , F R A C S
GYNÆCOLOGICAL SURGEON TO THE MIDDLESEX HOSPITAL

Everyone concerned with abdominal section, and most of all perhaps the patient, knows that following the operation a derangement of the stomach and intestines characterised by an excess of gas and disordered *peristalsis almost invariably occurs* Its severity varies considerably, but all persons who have had their abdominal cavity opened would agree that the distress caused by the intestinal derangement was the worst part of what they had to suffer

Clinical Considerations

No matter where the operation area be placed, the derangement begins in the stomach and upper intestine and it rarely appears until the second day after the operation

The mildest form is in the nature of a wave , at the beginning epigastric distension with belching and some vomiting is present, but after a time the epigastrium flattens, belching ceases, and the distension can be seen to have moved lower down Later on still it is obviously in the colon, and soon after that flatus is passed per anum with colicky pain The appearances are as though a charge of gas introduced into the stomach and duodenum was being driven down by peristalsis, the bowel recovering itself once the volume of gas has passed on When the derangement is more severe, however the wave like progression is less marked or wholly absent The distension progressively extends downwards, but the upper intestine and stomach do not clear themselves with the advance and remain distended until a great length of the intestinal tract is over charged with gas, the process no longer suggesting a locally produced charge being moved on by peristalsis, but a continually spreading area of gas formation This is accompanied by more or less persistent vomiting, the vomit assuming the appearance of the contents of the upper intestine , and the condition if persisted in may end in the full appearance of the syndrome of obstruction There is, however, no hard and-fast line to be drawn between the grades of severity of the derangement, which even in its mildest form is a reminder and a menace of disastrous possibilities The derangement manifests itself by excessive gas and disturbed peristalsis, but the proportion borne by each to the total clinical picture varies In the one extreme there may be no apparent distension but much painful peristalsis, and in the other much distension and no apparent peristalsis , whilst in between lie the much commoner cases in which both distension and excessive peristalsis are present

There are other clinical facts which need to be noted Generally speaking the derangement is more likely to be marked after operations involving a wide area rather than a restricted one and after those necessitating a large amount of tissue trauma rather than a small amount but there is no fixed relation between the magnitude of the operation and the degree of the derangement Much handling and especially rough handling of the intestines is commonly held to promote it, but here again there is nothing constant and great derangement may follow an operation in which the intestines were not only never touched but never even viewed

The advent and extent of the derangement have further no certain dependence on whether the operation area be septic at the time of the operation or not septic If in a septic case the abdomen be distended before the operation it will be distended after it, but the distension does not necessarily increase, and if there is no distension before the operation it does not necessarily appear afterwards One would have imagined that, other things being equal septic cases would exhibit much more post operative flatulence than cases not septic , but, if pre-operative distension, which is continued after the operation, be excluded, and attention be directed only to post-operative increase in the intestinal gas, the difference between the two classes of case is not great Everyone has seen great distension follow an entirely clean operation and a perfectly flat *abdomen remain after* a very infected one Post operative distension is in a general way most marked after operations which it may be surmised effect a considerable alteration in the intra abdominal pressure as, for instance, ovariotomy or Cæsarean section , but there is no general rule about this nor can the surgeon distinguish beforehand cases likely to distend from cases likely to remain flat The incisional site has an influence Incisions situated above the umbilicus *or well out to the* side of the abdomen, are less apt *to be followed by intestinal* derangement than those situated below it or in the *middle* line A still greater immunity attends operations where the incisions open an annex of the peritoneal cavity as, *for instance, inguinal* and femoral herniotomy, vaginal hysterectomy, and the intentional or accidental *opening of* the peritoneum through a loin incision A remarkable fact in this *connexion is the* relative freedom from intestinal derangement that pertains to a transverse skin incision in the pubic hair area with vertical division of the aponeurosis and *peritoneum* The derangement is on the whole commoner in elderly *than in young* patients ; this is certainly true of its extreme form functional *obstruction* ("paralytic ileus") Further it has to be *noted* that great intestinal distension may follow *retroperitoneal* nephrectomy and conditions involving the posterior *retroperitoneal tissue,* like hæmorrhage in that situation, although in neither *instance has* the peritoneal cavity been opened , *and moreover it not infrequently* occurs after prostatectomy I *have* twice seen it as a spontaneous occurrence during pregnancy *and it* is sometimes seen as a terminal event in pneumonia.

Origin of the Intestinal Gases

The gases within the stomach and *intestine* are derived from three sources · (1) air taken into the stomach in the act of swallowing , (2) diffusion through the gastric and intestinal walls of gases in solution in the blood , and (3) chemical *changes* in the intra intestinal matter The proportions *normally* contributed from these three sources to the total gas content is unknown but they are probably variable. Experiments by *Douglas* MacLeod and Kramer have showed that the *quantity of air taken* into the stomach during swallowing was not only very *definite* but that it was greatest when deglutition took place with the individual *lying down*

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* The Bradshaw lecture delivered before the Royal College of Surgeons of England on Dec 13th 1934

Numerous workers have proved that gases are both diffused through and absorbed into the intestinal wall, the relation between diffusion and absorption being such that a balance is maintained between the partial gas pressure of any particular gas in the lumen and its tension in the blood. Analysis of the gas withdrawn from the stomach and intestine under normal circumstances and after abdominal operations shows a mixture which broadly speaking resembles vitiated atmospheric air. Considerable variations obtain, but on the average N forms the largest component, whilst CO_2 is excessive, and O sparse as compared with air. In addition, varying quantities of H, CH_4, and H_2S are sometimes present If a volume of air be introduced experimentally the nitrogen component absorbs slowly, but the oxygen component quickly, its place being taken by an amount of diffused CO_2 It would appear that the contribution made by diffusion to the general content chiefly consists of CO_2, and since its diffusion is governed by its tension in venous blood which is 60 mm. of mercury or about one-eighth of an atmosphere, so soon as this partial pressure is reached in the lumen diffusion of the gas ceases

The contribution normally made by intra-intestinal chemical action is again not known, but the neutralisation of the acid contents of the stomach must furnish a very definite quota, as also must the action of bacteria on certain substances, such as cellulose Gases like CH_4 and H_2S when present in the intestine must have been formed by chemical action but they are occasional only.

Disposal of the Intestinal Gases

In health the amount of gas introduced into or produced in the intestinal tract is balanced by a mechanism of removal which is made up of two factors—absorption and peristaltic transportation.

Absorption occurs when the pressure of any particular gas in the lumen exceeds its tension in the blood, but the *amount* absorbed depends upon the rate at which the blood can carry it away—i.e., on the activity of the circulation through the intestinal vessels That the removal of gas by absorption can be rapid has been proved by experiments on animals and is also demonstrated by the fact that during the period of an abdominal operation the intestines may markedly collapse Peristalsis gives important aid to absorption by passing on locally produced gas to other parts of the intestine, thereby making available for absorption a much larger area of surface than would otherwise be the case Gas in excess of what can be dealt with in this way is expelled from the body. The amount of gas daily passed per anum varies in individuals, but in the young and healthy it is not as a rule great, and may be none at all, which shows that in such persons absorption is the principal means by which gas is got rid of.

Intestinal Gas Pressure

The intraperitoneal pressure or the pressure exercised on the abdominal parietes by the intestines as a whole depends on (1) their tendency to expand, (2) their weight, and (3) the presence or absence of muscular contraction of the diaphragm and abdominal muscles The normal average pressure of the gas within the intestine has been variously estimated, some observers stating it to be above that of the atmosphere and some below. In human beings, if the effects of weight and muscular contraction of the parietes be abrogated by full anæsthesia and the recumbent posture, it appears to be below, for otherwise it seems impossible to account for the phenomenon familiar to all surgeons that on opening the peritoneal cavity the intestines usually fall away instantly from the abdominal wall. Since the tendency of the intestine to expand varies inversely with the resistance of the intestinal wall, it is possible to conceive the resistance of the wall being so great that though the intestinal pressure was very high indeed, no part of the pressure came through to the parietes Such a condition may be produced locally as the temporary result of peristalsis, but the appearance and feel of the intestines exposed by an abdominal incision show that it is not generally existent

The pressure of the intestinal gas depends not only on its amount and the resistance of the intestinal wall but is influenced also by the abdominal parietes Since normally the intestines are everywhere in contact with the abdominal wall and the peritoneal cavity is potential only, we can for simplicity imagine the intestines as consisting of a uniform gas-containing cavity bounded by an envelope whose thickness consists of both the intestinal wall and the abdominal parietes, in the same way as the air contained in a fully inflated tyre is bounded by an envelope composed of the inner tube and the outer cover The envelope formed by the combined abdominal and intestinal walls opposes to the pressure of the gas contained within it a resistance which is partly mechanical and passive and partly vital and active, and the resistance is reinforced by the atmospheric pressure everywhere applied to the outer surface of the abdominal wall If the tissues enveloping the intestinal gas were composed of lifeless material, distension could only be effected by raising the gas pressure in the intestine considerably above that of the atmosphere and stretching the envelope, but the case of an envelope composed of living tissues is different, for within limits such envelopes have the power of adapting themselves to the volume of their contents. The classic example of this is the bladder, but the power is also possessed by the tissues that envelope the intestinal gas Sherrington[1] found that the introduction of as much as 400 c cm of water into the stomach of an etherised dog only caused the intragastric pressure to rise 1 cm of water above atmospheric pressure; whilst Owings, McIntosh, Stone, and Weinberg[2] showed that in dogs experimental intestinal obstruction never caused the intestinal pressure to rise more than 10 cm of water above that of the atmosphere except during peristalsis

The question how far this vital adaptation can go in the case of human beings merits consideration, for after it has reached its limit any further distension must be effected by mechanical stretching, and to do this a pressure in the intestine much greater than that of the atmosphere would be required The presence of such a pressure would be proved by observing that when, under full anæsthesia, the abdominal cavity was opened the intestines not merely protruded but expanded after they protruded Now all surgeons of experience have seen this phenomenon, but only in cases of very extreme distension, which shows, I think, that the adaptive power of the intestinal and abdominal walls is far greater than is commonly supposed It is probably at its greatest when the abdominal wall has been already rendered lax by pregnancy or a large tumour, for in cases of this sort a great degree of flatulent distension can exist without untoward symptoms It seems certain that even under abnormal circumstances the pressure of the intestines as a whole on the abdominal wall (the intraperitoneal pressure) could not for any length of time rise greatly above atmospheric pressure, for such a pressure would stop the circulation through the abdominal veins

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[1] Sherrington, C Brain, 1915, xxxviii, 191

[2] Owings, McIntosh, Stone, and Weinberg Arch. of Surg. 1928, xvii, 507

Up to now we have for simplicity been considering the space within the intestine as a uniform cavity bounded by a uniform envelope In fact, it is a cavity divided into many compartments, the divisions between which are the various points where the mucosa is in contact either on account of the contraction of the circular fibres or the pressure of adjacent coils The intestinal gas therefore does not constitute a single gaseous column but a series of columns, which is why the intestine when opened does not collapse throughout its whole length like a punctured tyre Each column of gas is bounded not only by the wall of its compartment, but by the coils of intestine that surround it If the amount of gas in any particular column is quickly increased the pressure in that compartment will rise and adjacent compartments will be compressed until the pressure in them rises to somewhere about that in the first compartment Compartments farther away will be less and less compressed as the force generated by the increased gas content of the first compartment is gradually used up in overcoming the resistance of the walls of the other compartments Local distension therefore of any segment of the intestine, unless compensated for by withdrawal of gas elsewhere, compresses and raises the pressure in neighbouring coils, so that additional force is required to pass anything into them It may be surmised that the colic often seen in post-operative intestinal derangement is due to the efforts of the intestinal muscle to force gas and fluid into compressed coils

Mechanism of Distension

For distension to occur there must be a breakdown of the gas balancing mechanism, either in the direction of increased production, or diminished removal, or of the two together

Increased production —There is no reason to suppose that an abdominal operation increases the amount of air swallowed, since for the first 24 hours at all events the patient not only swallows very little but is often vomiting what is swallowed Post operative distension has been ascribed to an accumulation of swallowed air during the period over which intestinal movement is in abeyance, but the theory does not accord with the fact that the distension rarely appears before the second day, by which time the stomach and upper intestine have certainly recovered their mobility. Moreover if the distension was solely or chiefly the result of swallowing air it should be less marked the more the patient vomited, but the reverse is the case

McIver, Redfield, and Benedict [3] showed that diffusion of CO_2 into the intestine is increased when the blood flow through the intestinal capillaries is slowed by partial obstruction to the venous return, and on reopening the abdomen of a patient suffering from post-operative intestinal derangement congestion of the mesenteric veins is seen increasingly marked up to the region of the jejunum, the appearance suggesting a vasomotor disturbance Tyrrell Gray [4] has demonstrated that distension of the intestine stretches the mesentery with consequent impeding of the flow through its veins but as considerable distension must already exist before this mechanism can operate it is contributory to the final state only Equalisation of the CO_2 pressure in the lumen and the CO_2 tension in the blood must be delayed by the vital relaxation of the intestinal and abdominal walls already referred to, so that the amount diffused must be larger than would be the case if such yielding did not occur, but my friend and colleague, Prof Samson Wright, to whom I am indebted for much help in this connexion, has pointed out that diffusion at its maximum could not cause the total gas content to be increased more than 10 to 15 per cent

The part played in the production of distension by chemical changes in the intestinal matter is difficult to assess because little precise knowledge is available On reopening the wound of a patient in whom severe intestinal derangement has progressed till the symptoms suggest obstruction the intestine is found to contain, besides gas, a large quantity of fluid, more or less corrupt and identical with that which the patient is vomiting The corruption is usually ascribed to bacterial action, but it is probably in large part the result of obscure biochemical reactions, for enhancement of organismal activity within the intestine is generally accompanied by signs of enteritis, whereas in a case of obstruction the intestinal mucosa viewed during the performance of jejunostomy presents no such signs, moreover, though the upper intestine contains very few organisms, obstruction at that level produces corrupt vomit much more quickly than when it occurs lower down where organisms are plentiful, and further, the symptoms of inflammation of the intestinal mucosa—even to extensive ulceration—are never those of obstruction That corruptive changes might result in the production of gas, perhaps on a large scale, seems probable, but we have at present no accurate knowledge of the processes at work Whatever their nature there is every reason to believe that they are also operative, though in lesser degree, in those cases which eventually respond to non operative measures, and in whom therefore definite knowledge of the state of the intestine is not obtained On the other hand, the contents of the distended intestine are not the same throughout As a rule the fluid is most abundant in the upper part, whilst below it extends a long length which though equally distended contains very little matter, so that the *amount of gas in any particular segment does not seem to be related to the amount of matter it contains* This might be explained as the effect of peristalsis driving down *gas locally produced into* parts of the intestine that are empty, but the explana*tion fails in those cases* in which peristalsis seems to be *in complete abeyance* On opening the intestine the *fluid* within it may or may not exhibit visible bubbles The amount of gas that could be produced by biochemical or bacterial action is *not subject to* limitations like gas derived from swallowing or *diffusion, and* could continue to be formed after persistent vomiting, and great pressure in the intestine *had abrogated the two latter sources* of production

Diminished removal —Interference with the venous return in the mesentery retards absorption, and *congestion of the mesenteric veins* is present in all cases of intestinal *derangement in* which the abdomen is *reopened, and* presumably also in those which recover without a *second operation* I have already suggested that this congestion is in the first instance vasomotor *in origin* and later on it is certainly increased by *traction* on the mesentery When *the tension reaches* a sufficiently high grade two other causes of retarded absorption become operative—namely the effects of the intestinal gas pressure on the capillaries of the intestinal wall and the effect of the intraperitoneal pressure on the veins of the portal system As the normal pressure in the capillaries is estimated at somewhere between 10 and 30 mm Hg above atmospheric pressure, and that in the mesenteric veins as being lower still, no very great increase in either the intra-intestinal or intraperitoneal pressure would be required to slow the blood flow through either of them

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[3] McIver, Redfield and Benedict Amer J Physiol 1926 76 92

[4] Tyrrell Gray, H THE LANCET, 192[illegible] i, 1291 1313 Brit Med Jour 19[illegible] i, 8[illegible] 1926 i 1181

Very marked interference with the venous return produces an outpouring of fluid into the lumen of the intestine If the main vein of a portion of the mesentery of an animal be experimentally ligatured the segment of intestine which it drains becomes distended with fluid not with gas. This is understandable, for such a ligature almost stops the circulation through the segment, so that although the blood in the capillaries is overcharged with CO_2 so little blood flows through them that no considerable quantity of the gas can be diffused The same phenomenon is seen in acute volvulus and extensive mesenteric thrombosis, the bowel in relation to the lesion being full of blood-stained fluid but little gas It seems unlikely that vasomotor disturbance by itself could bring about a venous obstruction sufficient to cause exudation of fluid, unless tension on the mesentery and a great rise in intra-abdominal pressure were added; but the rapid accumulation of fluid in the intestine that occurs in cases of post-operative intestinal derangement advanced to the stage of obstruction would appear to be largely due to this conjunction.

Opening the peritoneal cavity is followed by cessation of peristalsis, and this withdraws one factor from the mechanism of gas removal The cessation in the first instance is the result of the anæsthesia,† but after the effect of this has passed off it is commonly ascribed to sympathetic inhibition If this is so it acts unequally, for the inhibition is withdrawn early from the stomach, later from the small intestine, and last of all from the large intestine The length of time over which inhibition can operate is not known, but when peristalsis is long in abeyance some paralysing influence seems probable Dale[5] has shown that acetylcholine is the transmitter of parasympathetic motor impulses to the intestinal muscle-fibres, and non-formation or neutralisation of this substance is possible Peristalsis however is shown experimentally to be able to continue after all nervous connexions with the bowel have been severed In certain cases of post-operative intestinal derangement the cessation of movement affects the whole length of the intestine, but as a rule the cessation is regional, part of the intestine moving vigorously or over-vigorously, whilst the remainder is inert Experiments on animals show that great distension of the intestine paralyses it, and this is supported by operative experience, whilst a further effect is the creation of multiple kinks between the tightly packed coils, each one of which constitutes a mechanical obstruction. Pre-existent kinks, the result of adhesion, are accentuated by distension until mechanical obstruction may result, and, as I have pointed out, great distension limited to a segment may exercise a pressure on adjacent coils capable of obstructing them

It is probable that the importance of peristalsis as a factor in gas removal varies in different individuals, for some in health habitually pass but little, whilst others pass a great deal, and this may explain the fact known to all abdominal surgeons that, apart from all other considerations, the liability to distension has a personal element Taking all the facts cited into consideration it may be concluded that in the creation of distension, diminished removal of gas plays a greater part than increased production, and of the causes of diminishment deficient absorption is the more important

Post-operative Functional Obstruction

The distinction between post-operative intestinal derangement and post-operative functional obstruction is quantitative, not qualitative, and clinically all degrees of severity, between mere temporary flatulence and acute obstructive symptoms, are met with; showing that we are dealing, not with separate entities, but different phases of the same thing. The more marked the distension, the greater the peristaltic abnormality, the longer the passage of flatus is delayed, the more persistent the vomiting and the more corrupt the vomit, the more is obstruction suggested. All surgeons are familiar with those anxious cases in which the question whether to reopen the abdomen is decided, not on specific symptoms, but on the efficacy or otherwise of non-operative measures

Excluding gross mechanical obstruction, which occurring after an operation is an accident, the condition of the intestine found on such reopening may be thus classified: (1) a kink not in itself sufficient to close the lumen, above which kink the intestine is distended; (2) a similar kink immediately above which the intestine is not distended but empty and flattened whilst above this distension is present, (3) a segment of the intestine, usually the lower coils of the ileum, is empty, flattened, and spastic, whilst above this portion the bowel is distended Sometimes there are two spastic segments, the "ileus duplex" of Handley; and (4) distension without either kink or spastic segment The distension may be universal over the entire length of the bowel or limited to a part of it, for instance, the jejunal coils may be alone affected.

The state of the distended intestine is the same in all the four findings described. Its lower part contains much gas but very little fluid or solid matter; whereas its upper part is heavy with the presence of much fluid as well as gas The fluid is not the normal contents of that part of the intestine but has undergone more or less corruption, even to fæcalisation, and it forms the reservoir from which the vomit is derived The whole length of the distended section exhibits evidence of vascular disturbance but this is increasingly marked as the bowel is ascended, and reaches its maximum in the upper coils of the jejunum Here the intestine is purple in colour with occasional dark transverse lines, probably caused by capillary stasis, whilst the mesenteric vessels and particularly the veins are engorged.

The problem of obstruction due to functional failure of the intestine to propel its contents downwards is more complicated than that of mechanical obstruction, for in the latter the mechanism of arrest and the lesion causing it are one and the same thing, whereas in the former they are separate The subject of functional obstruction is, however, best approached through certain considerations concerning mechanical obstruction. Treves, lecturing in this theatre 50 years ago, stated that "as an abstract proposition obstruction to the lumen of the bowel for a period of a week or more, is not in itself, all other circumstances being disregarded, a condition which need cause death or even distressing inconvenience" The pronouncement is true because of the introduced time limit. If that be taken away, the statement to be correct would need enunciating thus. "Obstruction of the lumen of the bowel, all other circumstances being disregarded, is the slowest way of producing the syndrome of obstruction" This is exemplified by a terminal colostomy, which may be left unopened for four or five days, during which the absolute obstruction produces no symptoms. I recall a case in which a surgeon included a loop of small intestine in a ligature, not knowing he had done so, and cut it away with the tumour he was removing For several days after the operation the patient presented no untoward symptoms whatsoever Nevertheless, persistence of the obstruction eventually produces the obstruction syndrome, as in the case of a colostomy if the bowel was not opened, or as finally happened in the surgical accident I speak of.

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† Local anæsthesia does not stop peristalsis.

[5] Brit. Med Jour, 1934, i, 835

In strangulation of Meckel's diverticulum the mechanical obstruction only affects the intestinal flow from a backwater, leaving the main stream uninterfered with, but intestinal derangement culminating in the obstruction syndrome develops, because the motor and vasomotor phenomena characteristic of functional obstruction are induced in the continuity of the intestine Some agent must be transferred, or the effect of some agent transmitted from the diverticulum to the continuity of the intestine to effect this Strangulation of a partial (Richter's) hernia produces the obstruction syndrome although no mechanical obstruction of any sort exists, and again, some agent (presumably the same as that formed in the case of the strangled diverticulum) must be transferred from the area of strangulation to the continuity of the intestine, which induces the motor and vasomotor effects that characterise functional obstruction

We can extend this hypothesis to mechanical obstruction in the continuity of the intestine, by visualising the strangled portion of the intestinal wall in a partial hernia to be increased in area until closure of the lumen is produced The local situation remains so far as the lesion is concerned, but mechanical obstruction is added Since, however, by our hypothesis an agent is being generated in the lesion which of itself will produce functional obstruction, the difference made by adding mechanical obstruction will be relative to the rapidity and completeness with which the agent brings functional obstruction about If this is effected rapidly, the fact that at the same time the lesion mechanically closes the lumen will make little or no difference to the course of events

In this illustration mechanical obstruction is superimposed on functional obstruction Let us now consider the much more common event of functional obstruction being superimposed on mechanical obstruction Though all lesions causing mechanical arrest produce the obstruction syndrome, some cause it to appear with great rapidity, whilst others, though at the same level, produce it very slowly, as for instance, the contrast between the effects of an unopened terminal colostomy and volvulus of the colon, and this difference must depend on whether the lesion causing mechanical arrest does, or does not, generate the agent of functional obstruction, and if it does then with what violence and rapidity

Of the intestinal lesions constantly giving rise to the syndrome of obstruction, those in which the blood flow through the area of the lesion is impeded by venous blockage give rise to it most violently of all as for instance experimental intestinal torsion or ligature of a main mesenteric vein in animals and volvulus, strangulated hernia and mesenteric thrombosis in clinical practice I pointed out in 1910 that an area of tissue whose blood circulation has been interfered with but not entirely cut off, by partial strangulation or a sub occluding ligature, is in a state analogous to that which obtains in red infarction, and like the latter, exhibits a peculiar irritancy to the tissues in its neighbourhood, and that some substance must be generated in the blood soaked area to effect this It may be suggested that, when such an area affects the intestine, the substance is identical with the hypothetical agent concerned in the production of functional obstruction

On the other hand, lesions unaccompanied by vascular interference, such as simple ligature of the intestine in animals and surgical suture of the bowel end, or accompanied by complete interference, as in the case of the surgical accident I have described, produce the obstruction syndrome much more slowly A considerable portion of the intestinal wall may be included in a surround ligature with impunity, even when, as in the case of the appendix, a portion of mucosa is included, whereas, spontaneous strangulation of an equal area results in the symptoms of obstruction The fact that inflammatory states of the intestinal wall even to the extent of gangrene, like gangrenous appendicitis, do not commonly produce symptoms of obstruction, may be explained by the fact that the vascular arrest bringing about the gangrene is a complete one It also supports the conclusion that the agent I have hypothesised is not generated by bacterial action

The addition of functional arrest to mechanical arrest has the effect of raising the level of arrest, and animal experiments and clinical experience conclusively prove that the higher the arrest the more violent are the symptoms, but beyond this, the motor disturbance is accompanied by a vasomotor disturbance that results in the accumulation of gas and fluid in the intestine Thus the different course of events in volvulus of the colon and an unopened terminal colostomy to which I have referred, is explained by the fact that, though the lesions causing mechanical arrest are at the same level, functional arrest at a much higher level and accompanied by a vasomotor disturbance of the mesenteric vessels is operative in the one case but not in the other

It is necessary to distinguish between functional obstruction directly dependent on a lesion causing mechanical arrest, and the arrest finally induced by the paralysing effect of extreme gaseous distension and toxic intestinal matter The appearance or non appearance of the former is governed solely by the nature of the lesion, but the latter is a terminal effect dependent only on the fact of the arrest, howsoever it be brought about

A great deal of research work on intestinal obstruction has been carried out in the United States, and the experiments of Stone, Bernheim, and Whipple* on dogs may be referred to here These workers isolated closed loops of intestine with the mesentery belonging to them at various levels and restored the continuity of the intestine by suture *High closed loops caused rapid death with symptoms said to resemble acute volvulus, but with diarrhœa as well as vomiting The lower the loop the less violent were the symptoms, until loops made from the large intestine were not incompatible with life The symptoms did not appear if the loop was enteros*tomosed at the time it was made and subsided on subsequent enterostomy of the loop or its complete removal if performed before the animal was too ill to recover A toxin whose origin was ascribed to biochemical processes in the mucosa was shown to be present in the loop contents, for these intravenously injected into a second animal caused the same effects These results which in the main have been confirmed by other workers must be applied to human beings with caution, but the condition of the experimental closed loop is in some respects analogous to what obtains in Meckel's diverticulum when it undergoes strangulation. It might therefore be inferred that the agent, which, transmitted from the diverticulum to the continuity of the intestine induces in it functional obstruction, is formed in the diverticular mucosa as the result of the arrested flow, in the same way and for the same reason as the loop toxin is said to be formed in the experiments described The inference, however, is shown to be untenable in view of what happens in strangulation of a partial hernia, for here the appearance of the agent must precede and be the cause of the arrested flow

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* [illegible] Bernheim and Whipple Jour Exp Med 1913, xvii [illegible] and 1914 [illegible] Hopkins Hosp 191[illegible] xx [illegible]

The foregoing considerations lead us up to those cases in which the syndrome of obstruction develops in the absence of any lesion in the intestine, and in which, therefore, the agent causing the motor and vasomotor disturbances that characterise functional obstruction must be generated elsewhere In many of these patients nothing amiss is discoverable on reopening the abdomen beyond the state of the intestine associated with the syndrome. In others a degree of plastic peritonitis is present in the operation area such as is not infrequently found when an abdominal wound is reopened for causes other than obstruction Peritonitis even when general, local peritonitis, though advanced to the stage of a large collection of pus, and hæmorrhage in the operation area are only rarely associated with the obstruction syndrome, so that when the conjunction occurs it must be fortuitous, and though all of them give rise to distension it has no specific distribution as in obstruction.

A much more active promoter of intestinal derangement, terminating perhaps in obstruction, is the presence in the operative field of an area of tissue, whose blood-supply has been interfered with but not entirely cut off This is significant in view of what I have already said; one of the most acute cases of functional obstruction I ever saw was caused by a suture which had by accident partially strangled the ovary I am not personally conversant with the state of the operation area when severe distension or functional obstruction follows lumbar nephrectomy or prostatectomy, but I understand, from those who are, that nothing specific is discoverable The only feature therefore common to all cases exhibiting post-operative functional derangement of the intestine, whatsoever its degree, is traumatised tissue in or in close relation to the peritoneal cavity, and somewhere in that tissue the agent producing the derangement must be generated It is clear that the agent does not derive from retained intestinal matter or from the mucosa of the segment where the retention takes place, and that it is distinct from any toxic substance that may be produced in either of them; so that the good results of jejunostomy must be ascribed, not to the removal of the agent, but to the removal of the corrupt matter and harmful distension which the motor and vasomotor disturbances caused by the agent have brought about In other words, the operation does not stop the production of the agent and its effects on the intestine, but abrogates the consequences that proceed from those effects

Whether the agent is transported by the blood stream or spreads by lymphatic channels or via the peritoneal cavity; or, whether, remaining local in the area in which it is produced, it acts on the splanchnic nerves in that area, causing impulses which check the mobility of the intestine and distur its blood-supply are speculative questions All thre are possible. If the agent acts through bloo transportation the lesion generating it might pr sumably be situated at a distance very remote fro the peritoneal cavity, whereas in fact it alway lies in or in very close relation to it There mus therefore be something peculiar to the tissues in th situation, as compared with those elsewhere, and t most obvious difference between them is that t former contain splanchnic nerves whilst the latt do not It may be that the agent can only generated in tissue that contains splanchnic ner substance, or it may be formed from that substanc By whatever means it becomes operative its effe seems, as a rule, to fall most powerfully on t stomach and upper intestine, and it is limited there in those remarkable cases of functional obstructi following a pelvic operation, in which, on reopeni the abdomen, nothing amiss is apparent exce intense congestion and distension of the jejun coils I have seen cases in which the stomach alo was affected No explanation is apparent to accou for the varying length of the intestine that the age affects in different cases, nor for the occurrence, a segment or segments, of spastic contraction T relative immunity from intestinal derangement th attends opening the peritoneal cavity in certa ways would seem to be in some manner connect with the fact that in those incisions less cutaneo nerves, or none at all, are divided It may be th injury to cutaneous nerves reflexly sensitises t sympathetic nerves connected with them

It is not within the provinces of this paper discuss the views of experimentalists as to the natu and source of the toxin present in the intestin contents in cases of obstruction, nor the part it pla in the production of the hypochloræmia and alkalo which accompany the fully developed syndrom These phenomena are terminal, not basic.

Summary

Operations that open the peritoneal cavity, without opening it, involve the tissues in juxtapositio to it, cause a derangement of the intestines chara terised by general or regional cessation of intestin movement, and a specific disturbance of the mesenter circulation, and as a result of these the gas-balanci mechanism is upset and gaseous distension ensue If these motor and vasomotor phenomena are marke and prolonged and the distension reaches a high grad the venous return from the intestinal vessels suffe additional retardation owing to the stretching of t mesentery and the raised intraperitoneal pressure the wall of the distended intestine becomes paralysed and kinkage occurs at multiple points produci a series of mechanical obstructions The great impeded flow through the mesenteric veins is followe by exudation into the lumen of the intestine, mo marked in that section where the venous congestio is at its maximum, and the fluid exuded undergoe a corrupting change whereby it becomes toxic

The events described are not specifically relate to operative injury or exposure of the intestine, fo they can occur after operations which do not open th peritoneal cavity; and this, together with the fac that the operation area is very commonly at a distanc from the area in which the events take place, can onl be explained by the hypothesis that the motor an vasomotor disturbances in the intestine, which ar fundamental to the derangement, are caused by a agent generated somewhere in the tissues that th operation has traumatised Such evidence as vailable suggests that its production has some relation o partial circulatory interference

The problems I have tried to coördinate are very ntricate and no one is more conscious than myself of the incompleteness of the result, but I chose the theme of this lecture in the hope of inciting more workers, in this country, to enter a field of clinical and experimental research from which knowledge, that will halve the risk and quarter the suffering that now attends abdominal operations, is waiting to be garnered

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THE MEAN DIAMETER OF THE ERYTHROCYTES IN ACHOLURIC FAMILY JAUNDICE

AND THE EFFECTS OF SPLENECTOMY

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The erythrocytes in acholuric family jaundice have been observed to have a diminished mean diameter, which is accompanied by an increase in the thickness, the mean cell volume is thus in proportion greater than the mean diameter[1-4] Observations by Whitcher,[5] led him to the conclusion that diminished mean diameter disappears after splenectomy and he added that this feature may be regarded as a consequent manifestation of the anæmia of the disease rather than an inherent character of the erythrocytes of the individual His method of estimating the mean diameter is described,[5] in which he measures 200 cells from each slide If his observations were confirmed, the return to normal of the mean diameter after splenectomy would suggest that the abnormal size was secondary to some morbid process activated by the spleen

In carrying out the investigations here recorded, the erythrocytes have been measured and the results calculated by the method described by Price Jones[6] In each case, complete clinical, pathological, and biochemical examinations were made synchronously, these results have been summarised elsewhere[7]

The changes which take place in the erythron in acholuric family jaundice are, as a rule, typical and consist of lowering of the number of red cells and the hæmoglobin, usually in about equal proportions, a high degree of reticulocytosis, a positive indirect van den Bergh reaction, and an excessive excretion of urobilinogen and urobilin Added to this in the large majority of cases are an increased fragility of the erythrocytes to hypotonic saline, and a diminution of the mean diameter (unaccompanied by similar change in mean corpuscular volume), together with increased variability Cases are recorded in which increased fragility, diminished mean diameter, and reticulocytosis have individually been absent[8] but the majority of cases (percentage figures are not available) present all the features mentioned. The present communication is concerned with such changes as have been observed by use of the Price-Jones curve, other points only being included for clarity where required unless the morbid action of the spleen, or some other mechanism within the recipient, was responsible for causing by its action the altered shape of the red cells. The mean diameter may be shown definitely to be raised after a transfusion, the phenomenon being still evident 24 hours later and disappearing gradually.

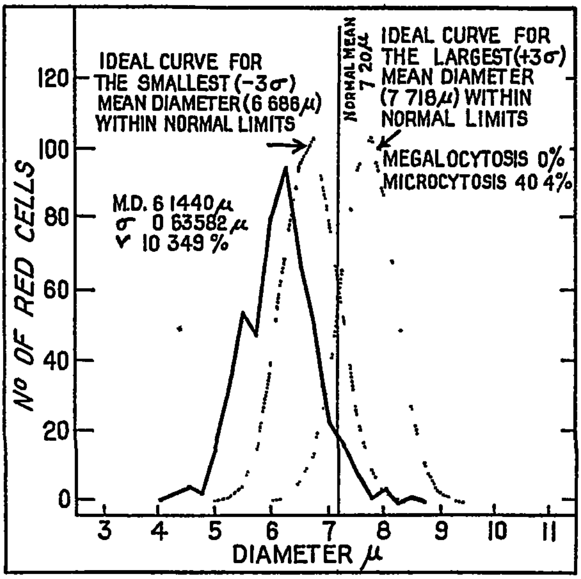

FIG. 1.—Typical Price-Jones curve in untreated acholuric family jaundice

We have observed four cases from their admission to hospital for periods up to eighteen months following splenectomy. In no case has the Price-Jones curve returned to normal In all there was a quick response in the form of a raising of the mean diameter, which approached normal, and in some cases then tended to recede again so that it ultimately found a level (not constant) on the low side of normal, different cases varying in the amount by which they were separated from normal. The increase in mean diameter is at first rapid and can be observed within three days (Fig 2); it becomes more gradual; one case actually reached normal mean diameter before falling again The subsequent slight fall, noticed in two of the four cases, was not associated with any apparent change in the blood count or clinical condition

The coefficient of variation also moves towards normal, but more slowly, and may show increase again after coming within normal limits; the striking thing about it however is that this shift towards normal is very slow, and is but little apparent at a time when the red cell count and hæmoglobin have returned to their normal level Thus in these cases the anisocytosis is not apparently related to the presence of immature cells in the same way that it may be in other anæmias, but to some unknown abnormality

OTHER ANÆMIAS SHOWING DIMINISHED MEAN DIAMETER

According to Witts,[11] in acquired acholuric jaundice with no family history, the cells do not show similar changes but may be slightly larger than normal We have found that they may on occasion be identical with the familial type of curve It is probable that acquired chronic hæmolytic anæmia is ripe for a further subdivision into types In acute hæmolytic anæmia (Lederer's anæmia) the diameter is sometimes diminished and sometimes increased (Witts[11]); our examples of this anæmia with diminished mean diameter have shown return to normal with recovery.

Diminished mean diameter is commonly seen in anæmia due to iron deficiency both in adults[12] and in infants[13]; in these cases however there is reduction in cell-volume.[4] Return to normal occurs with treatment by iron, the actual recovery process being accompanied by increased variability A similar phenomenon has been observed in anæmia due to copper deficiency,[14] and we have also observed it in anæmia accompanying scurvy. Diminished mean diameter, it is said, also accompanies anæmia due to hæmorrhage, and polycythæmia[6]; there is no evidence of its occurrence in splenic anæmia Abnormal falls in mean diameter are observed in the later stages of icterus gravis[15] and to a lesser extent in the blood of premature babies during the first few months of life.[16]

DISCUSSION

Were the spleen the cause of the described abnormalities in the erythrocyte, the mean diameter should return to normal after splenectomy, if on the other hand the cells were abnormal in shape entirely because of an inherited abnormality of the erythron, then the splenectomy should have no effect. It is obvious that the partial but not complete return to normal indicates something more complex. The spleen is, it would appear, causing a further distortion of an already abnormal cell, and splenectomy thus causes partial return to normal, the degree depending on a balance of the two factors It must also be remembered that the rest of the reticulo-endothelial system, in assuming certain functions of the removed spleen, may assert fresh influences on the erythrocytes But it is possible that further mechanisms come into play, a prolonged hæmolytic process is suggested as a possible cause for a fall in mean diameter in both premature infants[16] and in icterus gravis,[15] and this may have a bearing on the present argument The removal of the spleen might cause an increase in mean diameter in other diseases besides acholuric family jaundice, and even in the healthy person, but no adequate information is at present available on this point The fact that the mean diameter may be diminished also in the other blood diseases mentioned adds to the possible number

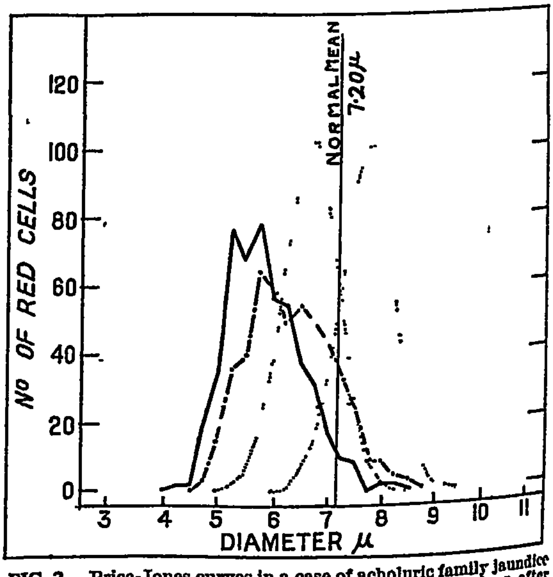

FIG. 2—Price-Jones curves in a case of acholuric family jaundice before splenectomy (continuous line) and three days after (interrupted line) The actual values are as follows Before splenectomy · M D =5 960μ, σ=0 65841μ, ν=11·0473%, microcytosis, 50 2% After splenectomy M.D =6 335μ, σ=0 76261μ, ν=12 03803%, microcytosis, 31 4%.

of causes which may be at work One fact emerges—namely, that neither the spleen nor the mechanism producing the red cells is alone responsible for this phenomenon, which must be due to a complex combination of circumstances

SUMMARY

In cases of acholuric jaundice the following observations have been recorded (1) Blood transfusion raises the mean erythrocyte diameter (2) Fluctuations in mean diameter may in part be dependent on the number of immature red cells present, apart from the influences of splenectomy and transfusion (3) In a new born infant, diminution of mean diameter and increased erythrocyte fragility preceded the development of any other evidence of the disease (4) In four cases where splenectomy was performed there was a move towards normal of the mean diameter, followed in two cases by a partial swing back Variability gradually decreases, and is not related to recovery of the blood count which occurs quickly (5) Mention is made of other anæmias in which the mean diameter is diminished (6) The possible significance of these findings is discussed

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THE PERIODICITY OF INFLUENZA

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A KNOWLEDGE of the periodicity of an epidemic disease is of practical value to those concerned in hospital administration, since it enables provision to be made to forestall the disorganisation resulting from an otherwise unforeseen and perhaps sudden increase in the number of patients This is particularly true of influenza epidemics as they are most frequent during winter, when sickness is at the maximum There is also reason to believe that some clue to the cause of influenza epidemics may possibly be found in the features of their periodicity

The material used for discussion here is that afforded by the "Weekly Return" of the Registrar General for the past 44 years from which it appears that during this period there have been 43 prevalences or epidemics in London of widely differing degrees of severity The accompanying Table of these prevalences shows the year of occurrence, the week in that year in which the maximum mortality was reached, the number of deaths in that week, and the interval in weeks to the next following epidemic

Prevalences of Influenza in London 1890–1933

Year	Week of max preval	Deaths in max week	Interval in weeks to next preval	Year	Week of max preval.	Deaths in max week.	Interval in weeks to next preval
1890*	3	127	70	1913*	12	65	46
1891	20	319	36	1914	5	32	55
1892	3	506	63	1915	8	83	61
1893	14	49	36	1916	17	41	35
1893	50	164	64	1916	52	98	80
1894	—	—	—	1917	—	—	—
1895	10	473	111	1918	28	287	16
1896*	—	—	—	1918	44	2458	17
1897	16	37	41	1919*	9	808	56
1898	5	102	58	1920	12	131	55
1899	11	125	43	1921	15	40	39
1900	2	340	60	1922	2	551	64
1901	10	39	50	1923	14	56	45
1902*	8	107	48	1924*	7	178	52
1903	3	43	59	1925	6	92	60
1904	10	24	49	1926	14	74	42
1905	7	40	61	1927	4	252	57
1906	16	43	37	1928	9	21	51
1907	1	87	60	1929	8	473	103
1908*	9	141	56	1930*	—	—	—
1909	12	138	46	1931	6	116	49
1910	6	45	51	1932	2	145	54
1911	8	24	52	1933	4	370	—
1912	8	35	56				

* In these years there were 53 registration weeks.

The only practical way of timing these epidemics is by the week of maximum mortality, and it is found that as thus timed they are most frequent in the eighth, ninth, and tenth weeks of the year—i e, about the beginning of March The seasonal distribution of the 43 prevalences will be seen in Fig 1 The 52 sectors of the circle represent the 52 weeks of the registration year, the dots against them indicate the number of times a prevalence has attained a maximum mortality in the respective weeks during the 44 years

It should be borne in mind in considering this graph that the timing of an epidemic by the week of maximum mortality is only an approximate means of assigning its seasonal position The interval between the first cases of an oncoming epidemic and the week of maximum *deaths* varies from one prevalence to another, and is probably on the average not less than seven weeks The winter solstice —Dec 22nd—falls generally in the fifty-first registration week The lowest mean temperature is generally two or three weeks later than the astronomical midwinter If, therefore, the influenza prevalences were entirely dependent upon temperature conditions there would be an average interval of about nine weeks between the winter solstice and the week in which epidemics are most frequent, which, as Fig 1 shows, is about the ninth week There is no special reason for thinking that temperature is a factor at all in seasonal distribution it is merely suggested that the lag of the period of greatest frequency upon the time of the winter solstice is consistent with a dependency directly or indirectly upon *some* climatological condition

On this assumption epidemics which are located in the graph between the tenth and thirty fifth weeks of the year can be regarded as governed by the condition of approaching summer, and for convenience of reference these are designated Group I. epidemics, on the other hand, epidemics allocated to the weeks between the thirty fifth week and the eighth week of the *following* year may be regarded as subject to

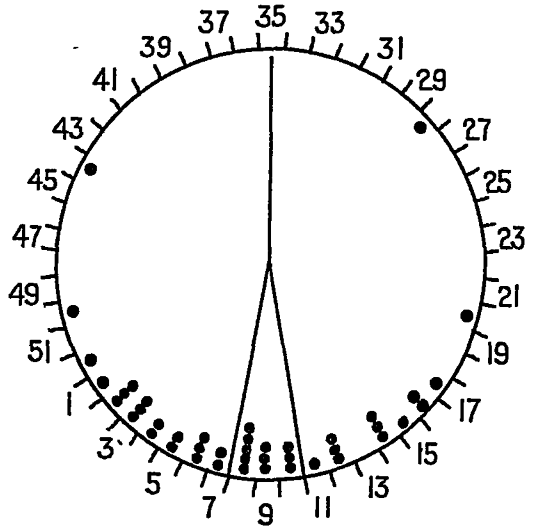


FIG 1—All influenza epidemics in London during the past 44 years The black dots are placed opposite the week of the year in which the various epidemics reached their maximum mortality.

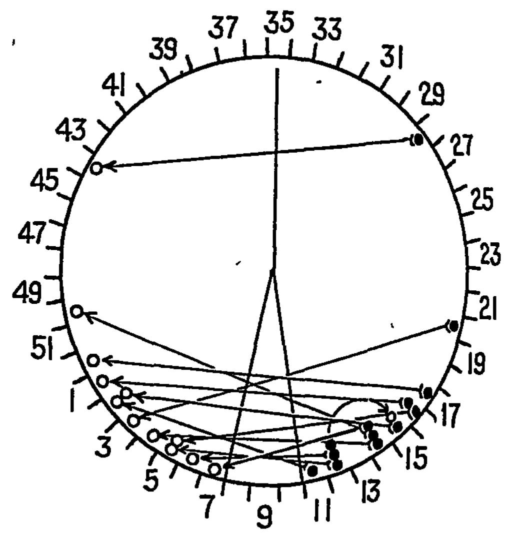


FIG 2—Epidemics of Group I (right-hand side) and on left the epidemics immediately following them (paired epidemics).

the condition of approaching winter and are classed as Group II epidemics In addition there are the epidemics allocated to the eighth to tenth weeks of the year, which cannot be classed definitely to one or other of these two groups owing to the known inaccuracy of the available means of timing the epidemics, and these form the residual Group III.

The epidemics of Group I—The peculiarity of the epidemics of this group is that with one exception—namely, a prevalence in 1920—each is paired with another *immediately following it*, the members of each pair being approximately equidistant from the thirty-fifth week of the year. The incidence of the Group I epidemics is shown in Fig. 2 by black dots on the right-hand side of the circle The epidemics immediately following them, with which they are paired, are shown on the left-hand side by small circles, each pair being joined by an arrow.

So far, therefore, as the epidemics of Group I. are concerned the facts may be stated as follows .—

> Where an epidemic originates during the six months influenced by the approach of summer (i) it will be followed by another epidemic in the succeeding six months; and (ii) the two epidemics will be approximately equidistant from the thirty-fifth week of the year

The average time elapsing between the paired epidemics is somewhat less than 41 weeks · hence an assumption of an *annual* periodicity would, if applied to the first epidemic of each pair, result in an average error of about two and a half months in the forecast.

In the *epidemics of Group II* there is a complete absence of any tendency to pair or balance (Fig 3A); in fact, in only one of the 18 epidemics of this group is there any following prevalence in the succeeding six months—namely, that in the forty-fourth week of 1919 With this exception the average interval between each of the epidemics and that immediately following is about *60 weeks* (Fig 3B) In respect of Group II. epidemics the rule therefore is —

> When an epidemic occurs during the six months preceding the winter solstice there will be no epidemic prevalence for, on the average, about *one year from the end of the six months.*

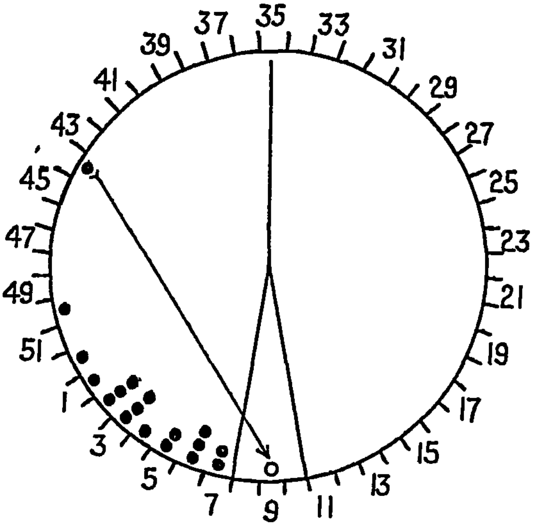


FIG 3A—Epidemics of Group II. (None "paired"—i e, none of them is followed by another epidemic in the following half-year.)

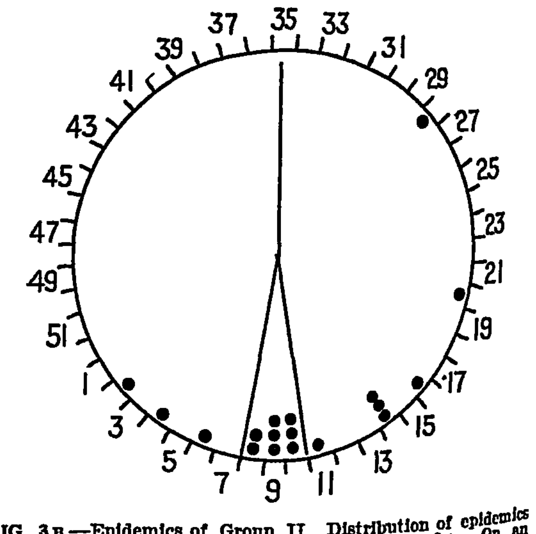


FIG 3B—Epidemics of Group II Distribution of epidemics immediately following those shown in Fig 3A. On an average these are 60 weeks later than those in 3A.

With regard to the residual epidemics forming Group III attaining a maximum during the eighth to tenth weeks of the year, there are two—namely, one with a maximum in the tenth week of 1895, and the other with a maximum in the eighth week of 1929—which were followed by *two* years of non-prevalence. In the remaining 11 instances the interval to the next following epidemic was on the average *about one year*.

In the present year, in the course of a relatively small prevalence, the mortality reached a maximum in the eleventh week. This indicates a prevalence beginning towards the end of the year and reaching a maximum about the middle of February. Reference to the table given above shows that the epidemics tend to alternate in severity as for instance in the years 1892–95 and 1920–24, but they are apt to "break step." It is, however, not improbable, in view of the mildness of the last prevalence, that we may now expect one of some severity.

CONCLUSIONS

The conclusions to which this analysis of the London epidemics point are that (i) the conditions associated with the approach of summer exercise a restraining influence upon an established prevalence of influenza, but that (ii) on the return towards the winter solstice the prevalence is renewed—generally with greater mortality—at a seasonal phase approximately the same as that at which the first prevalence occurred, and that (iii) in the case of a prevalence associated with an approaching winter solstice the *epidemic impulse is completely exhausted* and a year or more of freedom from epidemic prevalence follows.

Rules are given which enable an approximate forecast of a prevalence to be made.

THE MANTOUX TEST IN A GENERAL HOSPITAL POPULATION

With a note on the INTRADERMAL SYRINGE OF PICTET

By G. GREGORY KAYNE, M.D., M.R.C.P. Lond.
DOROTHY TEMPLE CROSS RESEARCH FELLOW IN TUBERCULOSIS

IN view of the increasing use of the intracutaneous tuberculin (Mantoux) test in clinical medicine, the results obtained in the following investigation carried out (in 1933) under routine hospital conditions may be considered of practical interest.

It was undertaken at St. Charles' Hospital, a London County Council general hospital admitting patients chiefly from the North Kensington district. A large number of the patients are of the "chronic" medical type. All ages are represented (Table I.) but there is a preponderating proportion of people over 45 and particularly over 60. The ratio of males to females was 10 : 9. Each patient was explained the nature of the test beforehand and in the case of children the parents were interviewed. Six patients only refused to have the test carried out. A total of 434 patients were thus tested consisting of 37 clinically tuberculous (of which 9 non pulmonary) and 397 clinically non tuberculous. The diagnosis accepted in each case was that made by the medical officer in charge and no additional investigations were carried out to exclude tuberculosis in surgical cases for example when the history and symptoms did not suggest its presence.

TECHNIQUE OF INVESTIGATION

Burroughs and Wellcome's Old Tuberculin Human (T), Series T 1586 was used. Dilutions were made with sterile distilled water and 0·5 per cent. phenol, and only those which had been prepared not more than ten days previously were employed. A hypodermic syringe of the "insulin pattern" graduated in twentieths of a cubic centimetre was used. The special short bevelled intradermal needles employed at first were discarded because they blunted very quickly as the result of "flaming" between tests. Very fine *sharp* hypodermic needles were found to give equally satisfactory results, but more care had to be taken in inserting the needle. Each test was carried out by rubbing the forearm with ether and injecting intradermally 0·1 c.cm. of the appropriate dilution. If any doubt was felt as to whether the whole of the dose had been given intradermally the injection was repeated on another part of the forearm.

Each patient was first tested with a dilution of 1 in 10,000 on the left forearm. This was read after 48 hours. If negative or doubtful the test was repeated on the same day with a dilution of 1 in 1000 on the right forearm. When this second test was read 48 hours later the left arm was also examined to see if a delayed positive reaction had appeared with the 1 in 10,000 dilution. After doubtful or negative readings with the 1 in 1000 dilution, a third test was performed the same day with a 1 in 100 dilution lower down on the right forearm. When the last was read 48 hours later the previous test area was also examined for a delayed positive reaction. Doubtful and negative reactions with 1 in 100 were again inspected two days later. In a few patients the test with the stronger dilution was not performed at the time of the first reading of the weaker dilution, but was postponed two or three days. Hence a certain number of patients with a delayed positive reaction did not have the test repeated with the next stronger dilution.

The minimum admitted as a positive reaction was a well defined erythematous area 10 mm. in diameter and slightly raised (as indicated by touch) above the surrounding surface.

Table IV shows that quite an appreciable proportion of the tests gave rise to some difficulty in reading (doubtful readings), 15 per cent., 10 per cent., and 7 per cent. for dilutions 1 in 10,000, 1 in 1000, and 1 in 100 respectively. It may be added that Opie and McPhedran[2] in their investigation took an area of redness 10 mm. in diameter as indicating a positive reaction, and state that "inconspicuous spots of redness, or redness with no œdema, have not been regarded as definite evidence of hypersensitiveness to tuberculin." Hart,[3] on the other hand, states that "a reaction should be regarded as positive if it consists of an area of erythema or erythematous infiltration the greatest diameter of which equals or exceeds 5 mm." Cummins and Walker[4] even considered "no reaction measuring less than 2 mm. across can be accepted as definite."

RESULTS

The number of patients tested and the readings obtained after 48 hours with the three dilutions according to age groups are indicated in Table I (clinically non tuberculous patients).

Table II gives the number and percentage of positive reactions for the different dilutions after allowing for delayed positive reactions and after correction for positive readings obtained with the next stronger dilution used before the delayed positive reaction had appeared. It will be noted that in each age group (from 15 years upwards) 28 per cent. to 39 per cent. are positive with 1 in 10,000, 35 per cent. to 48 per cent. more with 1 in 1000, and 0 to 19 per cent. more are positive with 1 in 100. Grouping together all patients from the age of 15 upwards we find that 33 per cent. are positive with 1 in 10,000, 74 per cent. after the test with 1 in 1000, and 86 per cent. after 1 in 100, and finally that 14 per cent. remain negative even with the strongest dilution. Hart's[3] corresponding percentages were 63, 88, 93, and 7.

His age-grouping was, however, different, and his figures here given are for 134 patients from the age of 21 upwards (as against 346 from 15 upwards) Moreover, the present series probably contains a far larger proportion of patients over 60, in whom reactions might possibly be expected to be feebler or absent as the result of general debility or alteration of the texture of the skin Thus in the age-group 30–34 the respective percentages correspond more closely to Hart's—39, 83, 93, and 7 The difference is most marked with the dilution of 1 in 10,000, and it should be pointed out that in Hart's investigation not all the patients were tested with this dilution, but only "individuals selected at random."

TABLE I.—*Clinically Non-tuberculous Patients*

Number tested and readings obtained at 48 hours with each dilution

Age-group	1 in 10,000				1 in 1000				1 in 100.			
	Tested	+	?	–	Tested	+	?	–	Tested	+	?	–
0–14	51	10	6	35	41	10	5	26	31	6	2	23
15–29	64	20	6	38	42	31	1	10	11	0	1	10
30–44	57	19	7	31	38	25	2	11	12	8	0	4
45–59	78	22	17	39	56	27	7	22	28	16	1	11
60 and over.	147	50	26	71	96	48	13	35	45	22	5	18
Total .	397	121	62	214	273	141	28	104	127	52	9	66

TABLE II—*Clinically Non-tuberculous Patients*

Positive reactions with each dilution and negative reactions with 1 in 100 (after correction for delayed positive reactions—see text)

Age-group	Patients tested	1 in 10,000	1 in 1000	1 in 100	Negative.
		Number and per cent.			
0–14 .	51	13 (25)	8 (16)	5 (10)	25 (49)
15–29	64	22 (34)	31 (48)	0 (0)	11 (17)
30–44 .	57	22 (39)	25 (44)	6 (10)	4 (7)
45–59 .	78	22 (28)	29 (37)	15 (19)	12 (15)
60 and over	147	54 (37)	51 (35)	21 (14)	21 (14)
Total .	397	133 (34)	144 (36)	47 (12)	73 (18)
15 and over (i e, excluding children)	346	120 (35)	136 (39)	42 (12)	48 (14)

Table III. gives the results obtained in the clinically tuberculous cases: 43, or 75 per cent, reacted positively with 1 in 10,000, 53, or 93 per cent, after 1 in 1000, and all were positive after the 1 in 100 test. While the numbers tested are small, nevertheless the results appear to support the hypothesis (also supported by Hart's results) that "the weaker the solution of tuberculin to which a patient will react positively, the more likely he is to be suffering from clinical tuberculosis rather than from subliminal tuberculous infection"

In Table IV. the doubtful reactions are analysed further. It will be noted that for both the 1 in 10,000 and 1 in 1000 dilutions roughly two-thirds of the doubtful reactions become positive either after 96 hours or with the next stronger dilution, but that over one-third of them were *not* positive with the next stronger dilution The above prompts the conclusion that whenever in any doubt at all as to the reading, a further test with a stronger dilution should be carried out

TABLE III.—*Clinically Tuberculous Patients*

Dilution	PULMONARY CASES (48).					NON-PULMONARY CASES (9)				
	Tested	+	?	–	No. + (corrected)	Tested.	+	?	–	No + (corrected)
1 in 10,000	48	37	4 (1 + later)	7	38	9	4	1 (1 + later)	4	5
1 in 1000	11	8	2	1	7	5	4	0	1	3
1 in 100	3	3	0	0	3	1	0	0	0	1

Table V. shows the number of doubtful and negative reactions (at 48 hours), which became positive after 96 hours—6 per cent and 9 5 per cent for dilutions 1 in 10,000 and 1 in 1000 respectively But 19 out of 106 or 18 per cent of the total number of doubtful reactions became positive, while only 14 out of 397 or 3 5 per cent of the total negative readings became positive. It would appear, therefore, that it is worth while to postpone retesting with a stronger dilution whenever a doubtful reaction is obtained until the test has been read again after 96 hours.

TABLE IV—*Doubtful Reactions (All Patients)*

Dilution.	Total readings.	Doubtful reactions. Number and per cent	Became + later (*a*)	Became + with next stronger dilution (*b*)	(*a*) + (*b*)	Were – with next stronger dilution
					Number and per cent	
1 in 10,000	454	67 (15)	14	30	44 (65)	23 (35)
1 in 1000	289	30 (10)	4	13	17 (57)	13 (43)
1 in 100..	131	9 (7)	1			
Total .	874	106 (12)	19	..	..	..

TABLE V—*Doubtful and Negative Reactions at 48 Hours, becoming Positive after 96 Hours (All Patients)*

Dilution.	1 in 10,000	1 in 1000.	1 in 100.	Total
Total doubtful and negative readings ..	292	136	75	503
Doubtful became +..	14	4	1	19
Negative became +..	4	9	1	14
Total number and per cent	18 (6)	13 (9 5)	2 (2 6)	33 (6 5)

SUMMARY AND CONCLUSIONS

1 A total of 397 clinically non-tuberculous and 57 clinically tuberculous patients representing a general hospital population were examined with the intracutaneous tuberculin test using dilutions of 1 in 10,000, 1 in 1000, and 1 in 100

2. Of the 346 clinically non-tuberculous patients from the age of 15 upwards, 35 per cent were positive after the 1 in 10,000 test, 74 per cent after the 1 in 1000, and 86 per cent after the 1 in 100, 14 per cent. were thus found negative even with the last dilution.

3 Assuming a well defined raised area of erythema 10 mm in diameter as the lowest limit of a positive reaction, 12 per cent of all the readings at 48 hours were doubtful About two thirds of these became positive either at 96 hours or with the next stronger dilution, one-third being negative with the next stronger dilution

4 It appears therefore advisable to regard a raised erythematous area at least 10 mm in diameter as the lowest limit of a positive reaction (rather than merely an erythematous area 5 mm in diameter) and to consider any less well defined reaction as doubtful

5 Eighteen per cent of doubtful and 3 5 per cent of negative reactions at 48 hours became positive at 96 hours

6 It is suggested that whenever possible a patient should first be tested with a dilution of 1 in 10,000 (four patients clinically non tuberculous in this series presented severe local reactions) and the reading taken at 48 hours If negative the test should be repeated with the dilution of 1 in 1000 the same day, but if doubtful this should be postponed until a further reading has been made at 96 hours A similar procedure should be adopted after the test with 1 in 1000 dilution After the 1 in 100 test all doubtful and negative reactions should be read again after 96 hours

I should like to express my gratitude to Dr W J. Fenton for his encouragement during the course of this investigation I have also to thank Sir Frederick Kay Menzies and Dr Basil Hood and the assistant medical officers at St Charles' Hospital for permission to perform the tests on the patients not under my own care

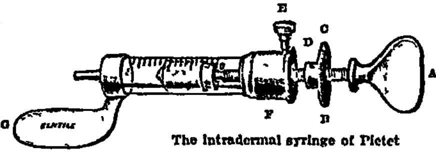
The Intradermal Syringe of Pictet

It is generally admitted that an intradermal injection requires a certain amount of dexterity and experience Particularly is it important to carry out this apparently simple operation satisfactorily when it concerns the Mantoux test, for it is essential that the *whole* of the dose of tuberculin be injected *intra*dermally For an occasional test in an older child or adult the use of an ordinary hypodermic syringe and a fine needle for this purpose offers no great difficulty When, however, one is dealing with an infant whose arm is very small whom it may be difficult to keep still, and whose skin often presents considerable resistance to the injection of even 0 1 c cm of fluid, the choice of instrument employed assumes great importance, especially when, for purposes of research, many infants have to be tested at one sitting

Since the investigation above described was made I have had occasion to use a syringe specially designed by Dr M Pictet, directrice of the Œuvre du Placement Familial des Tout Petits in carrying out a series of Mantoux tests on infants The simplification of the operation by the use of the latter instrument is so striking that I feel that its existence should be more widely known

The syringe, a sketch of which is shown in the accompanying figure consists, like an ordinary hypodermic syringe, of a glass barrel and a piston The latter carries a little disc B, which has a notch C on its edge, and a collar D with a little hole into which a screw E on the head of the barrel can be screwed in

The syringe can hold a little over 2 c cm of fluid and is graduated in tenths of a cubic centimetre It is separated into its two parts by unscrewing at F and can be boiled, or sterilised by immersion in alcohol To fill it the disc B is screwed up to the piston head A The syringe can then be filled and emptied in the ordinary way by drawing up or pushing down A. Having filled it, B is screwed down to F, turned so that the notch C is against the screw E, when the latter is screwed down into the little hole of collar D This fixes the piston so that it can no longer be moved up or down To eject fluid from the syringe A is turned in a clockwise direction, a complete turn being equivalent to 0 1 c cm , A is therefore turned to empty the syringe of air and the needle inserted in the skin , by carrying out a complete turn—two equal movements are essential, it is too awkward for one movement—0 1 c cm of the tuberculin solution is injected into the skin



The intradermal syringe of Pictet

The use of the syringe is simple and rapid, and the fluid is injected with great facility, presumably because of the greater mechanical "advantage" of the turning movement Moreover, it is much easier to gauge the dose injected by appreciating the turn of the piston head, than by gazing down at the graduated marks of a barrel

The syringe also has a flat rectangular metal disc G fixed to the end of the barrel Applied against the infant's arm with the operator's left hand, it is very useful in immobilising the syringe in the case of a struggling infant

The syringe, the cost of which in France is 90 francs (about 24s at the present rate of exchange), is manufactured by Messrs P Gentile and Co , 49, rue St. André des Arts, Paris 6°, to whom I am indebted for the loan of the sketch

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SOME OBSERVATIONS ON THE TREATMENT OF TABES WITH MALARIA

By A G Yates, M D Edin , F R C P Lond.
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The well-established therapeutic value of malaria in the treatment of general paralysis naturally suggests its use in other neurosyphilitic conditions, especially tabes It has been tried by a large number of observers and the general consensus of opinion, both in this country and abroad, is that whilst it is definitely useful, it is less so than in general paralysis The following observations are based on 32 cases of tabes treated with inoculated malaria which have been followed up for periods ranging from two to five years and in order to establish a rough comparison 24 cases treated with arsenic bismuth and mercury have been followed up in addition

It is notoriously difficult to estimate justly the effects of treatment in any disease and especially in a disease like this which may become arrested as a result of natural processes The method adopted—which at any rate has the advantage of being more practical, if less scientific, than other methods—was to base the judgment upon subjective symptoms.

To determine the results of treatment the following questionnaire was sent out —

1. Have you had any further pain or rheumatism ?
2 Have you had any difficulty in walking ?
3 Have you had any trouble with the water ?
4 Have you had any stomach trouble ?
5 How is your eyesight ?
6 Have you had any other symptoms ?
7. Are you better than you were before treatment ?
8 Are you able to work ?

The answers received were compared with the symptoms originally complained of, and in many instances the patients were seen and examined on subsequent occasions. It was difficult to separate the results into various grades, such as marked improvement, slight improvement, &c , but it was comparatively easy and probably of greater practical value to divide them into two groups

1. Good result—i e , cases in which an improvement occurred which was definite and well worth while

2 No result—i e , cases in which no such useful improvement occurred This group contained slight improvements, but of little practical value, stationary cases, and deteriorations

Case illustrating Group 1 —A B , aged 41. Twelve months' history, severe shooting pains, numbness, loss of weight, difficulty in micturition, occasional epigastric pain, great difficulty in walking, very ataxic, pupils inactive to light and unequal, knee- and ankle-jerks absent, W R ++ in blood and C S F cells 48 per cm , colloidal gold 24444210000 Treated with malaria, 9 rigors No other treatment Two years later had a little pain for a year, none since. Has felt quite well since treatment No difficulty with micturition, walks much better and can walk better in the dark Can run and catch a tram and jump off when it is going Reflexes unchanged Much less ataxic Gait almost normal. W.R negative in blood and C S F.

Case illustrating Group 2 —C D , aged 42. Three and a half years' history, severe shooting pains in legs and abdomen, marked ataxia, and occasional bladder symptoms. Pupils inactive to light, and knee- and ankle-jerks absent W R ++ in blood and C S F cells 67 per cm Colloidal gold 22311000000 Malarialised, 10 rigors Had a course of injections three years before, none since Three years later, severe shooting pains, no improvement in walking, bladder symptoms still present, no better

Having collected this information, and allocated the cases to their appropriate groups, a comparison was made between those treated with malaria and those treated with other methods The following figures were obtained (Table I.) —

TABLE I —*Comparison with Other Methods*

Cases malarialised . .	32	
No result .	21 =	65 per cent.
Good result . .	11 =	34 ,,
Cases not malarialised . .	24	
No result .	11 =	45 ,,
Good result	14 =	54 ,,

The good results were more numerous in the cases treated with other methods than in the malarialised cases, which confirms the view commonly held that malaria has not displaced the older methods in the treatment of this disease, but the fact that 11 out of 32 cases did show a decided improvement is in itself evidence that the method has real value, and especially so as in these 11 cases the results were strikingly good With the exception of one which had a course of injections immediately before inoculation, and two others which had treatment some years earlier, these cases were treated with malaria only

The symptoms in these cases were greatly improved and when they did persist were less severe Many of the symptoms were notably improved within a few days of the treatment being stopped, and sometimes even whilst it was in progress. Pain and crises in particular usually increased in severity at first but rapidly subsided, and in most cases disappeared before the patient left hospital After the treatment was concluded there was a general feeling of well-being, and they often volunteered the statement that they had not felt so well for years

Malaria, moreover, has a distinct action in modifying the condition of the cerebro-spinal fluid Table II. gives the average figures for the cells and albumin in 24 cases before and after treatment The colloidal gold curve was usually improved and sometimes rendered normal In most instances the Wassermann reaction was not altered, but in 2 cases it became normal.

TABLE II —*Effect of Malaria on C S F*

Twenty-four cases in which cells and albumin were estimated before treatment, and on discharge from hospital

Cells	
Average before treatment .	43
Average after treatment .. .	5
Albumin	
Average before treatment . .	0 06
Average after treatment . .	0 034

It is evident that we have in malaria a method of treatment which does in some cases materially modify both the symptoms and the condition of the C S F and that it is at least a valuable adjunct to other methods

The great variations in the results of treatment whether by malaria or other means suggested an attempt to find out whether there was any factor in the clinical character of the cases themselves which determined the capacity to respond to treatment. The first point investigated was the duration of the neurological symptoms when the patient first came under observation (Table III) —

TABLE III.—*Duration of Neurological Symptoms*

	Cases malarialised	
No result	Average duration ..	4 yrs 11 mths
Good result.	,, ,, ..	2 ,, 8 ,,
	Cases not malarialised	
No result.	Average duration ..	6 yrs
Good result.	,, ,, ...	1 yr 3 mths

This shows clearly that whichever treatment was adopted a short duration favoured a good result This, of course, is exactly what we should expect, for it is axiomatic that the earlier treatment is begun the better the result is likely to be.

The next point investigated (Table IV) was the cell count of the cerebro-spinal fluid when treatment was commenced.

TABLE IV.—*Cell Count of Cerebro-spinal Fluid*

	Cases malarialised	
No result	Average cell count ..	23 3
Good result.	,, ,, ,, .	68
	Cases not malarialised	
No result	Average cell count	11
Good result.	,, ,, ,, ..	34

This suggests very strongly that a high cell count favours a good prognosis Finding then that a high cell count and short duration favoured a good response to treatment, all the cases however treated were divided into two groups, with an arbitrary dividing line between them, as follows (Table V) —

TABLE V —*Effect of Cell Count and Duration*

1 *Cases of under five years' duration and 30 cells or over in the C S F*

15 cases	No result	5
	Good result	10

2. *Cases of over five years' duration and under 30 cells in the C S F*

14 cases	No result	11
	Good result	3

This suggests that a short duration combined with a high cell count favours a good response, whilst the reverse favours a poor one

The next point investigated (Table VI) was the albumin content of the cerebro-spinal fluid

TABLE VI —*Albumin Content of C S F*

Cases malarialised

No result	Average albumin in C S F	0 05
Good result		0 07

Cases not malarialised

No result	Average albumin in C S F	0 03
Good result		0 05

The differences here are not so striking, but the figures indicate that whichever method of treatment is adopted the successful cases showed a higher content than the unsuccessful ones, and that this is another factor favouring a good response As there appeared to be in this series of cases three factors all favouring a good prognosis, the cases presenting all three factors in combination were picked out, adopting an arbitrary dividing line as before i e all the cases were picked out which had a duration of five years or under, a cell count of 30 or over and an albumin content of 0 08 or over There were only six which satisfied all three conditions but the result was good in every case

These facts suggest some reflections on the pathology of tabes The old description was that it was due to degeneration of the posterior columns Then it was discovered that it was only the exogenous fibres arising from cells in the posterior root ganglia that degenerated, and much has been written about the exact place where the process starts Tabes, however, like most diseases is not a static entity but a process The beginnings go far back long before the appearance of any neurological symptoms Sometimes in the secondary and tertiary stages of the original infections marked C S F changes are found, and it is from these that the cases of neurosyphilis are subsequently recruited Of these changes the Wassermann reaction indicates an active virus and the leucocytosis certainly and the increased albumin probably, are evidences of an inflammatory process Tabes begins then as an inflammatory process and for a time remains as such Then gradually, degeneration begins, and the two processes overlap The inflammatory changes gradually subside and the degeneration gradually and surely increases The tracts of the central nervous system once destroyed cannot regenerate, and therefore the degenerative phase of tabes is incurable It is otherwise with the inflammatory phase and it is in cases with marked inflammatory changes (high cell count and albumin content) and where the degenerative changes are early and of short duration, that treatment is likely to be effective

Clinical and Laboratory Notes

FULL-TIME PREGNANCY IN A RUDIMENTARY HORN OF THE UTERUS

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THE following case may be found of interest both for its rarity and for the difficulty of diagnosis

The patient was a primipara of 35, who had been married for five years Her pregnancy had been uneventful and at no time had she suffered from abdominal pain She was admitted to Hillingdon County Hospital on Feb 23rd, 1934, being then three weeks overdue, with a history of having been in labour for two days The fœtus had died before admission On admission her general condition was good and she was in no pain Her pulse and temperature were normal the blood pressure was 138/80 mm Hg and there was no albuminuria The height of the fundus was consistent with a full time pregnancy and the fœtal parts were not felt with undue ease The head was deeply engaged in the left occipito-anterior position no fœtal heart was heard, and the uterus was not contracting On vaginal examination the cervix was not taken up the external os admitted one finger and the head was presenting X ray photographs taken on the following day showed a full time fœtus, lying to the left side of the abdomen in an anterior position

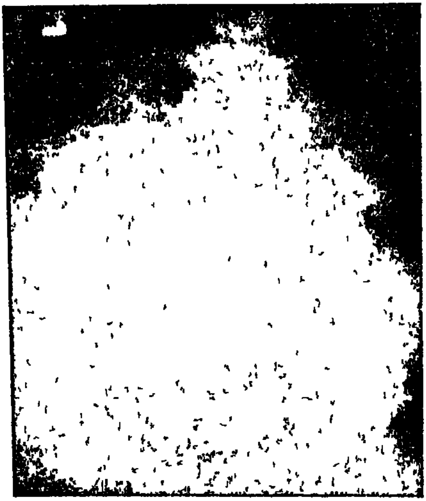

FIG 1 —Radiogram taken after injection of lipiodol into the uterine cavity The fœtal head is seen above and outside the uterus

Before admission the pains had been weak and as they did not return after a rest medical induction with quinine and castor oil was commenced This having no effect a surgical induction was performed four days later (Feb 28th) During the operation it was found impossible to sweep the finger round the head because there seemed to be a thin tissue lying between the head and the external os, finger on the left side A stomach-tube was inserted, but would only pass for about six inches. There was a crackling sensation over the left side of the uterus, resembling surgical emphysema.

On the following day the pains had not begun and the tube had fallen out The external os was dilated to the size of half a crown An attempt was made to hasten labour by rupturing the membranes but no membranes could be felt. A further course of medical induction was given Two days later, without any pain or bleeding, a piece of greyish tissue was passed which resembled friable placental tissue This unfortunately was not examined microscopically but was probably a cast of the uterine mucosa On March 5th there was a slight brownish discharge from the vagina The patient's general condition was still very good and no pains were present The blood pressure was 126/82

The following day, no progress being made, Mr. W. Gilliatt was called in consultation and diagnosed the condition as one of pregnancy in the rudimentary horn of a double uterus He advised delay of operation for a month, provided sepsis did not occur, to allow the placenta to atrophy as far as possible Confirmation of the diagnosis of an extra-uterine pregnancy was made by injecting lipiodol into the uterus, the outline of the slightly enlarged organ being shown clearly, quite separate from the fœtal head (Fig 1).

Unfortunately sepsis set in and the patient's general condition began to deteriorate slowly Abdominal pain was present, with increasing severity, and the temperature was swinging from 99° to 102° F. On March 15th the blood count showed a secondary anæmia of 2,500,000 with a leucocytosis of 13,000, mainly polymorphs, and the patient appeared to be so much worse that operation was no longer delayed.

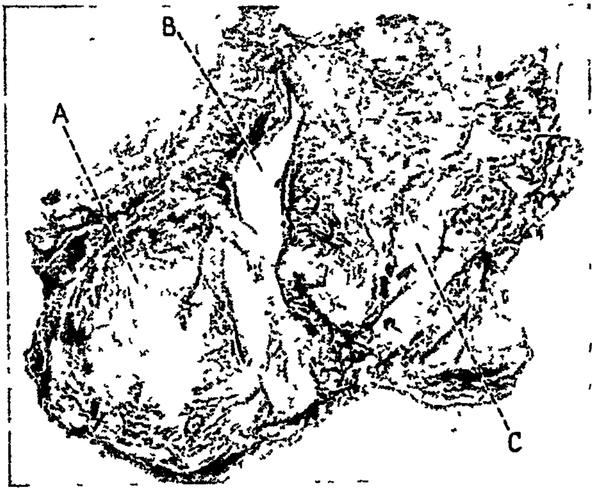

FIG. 2 —The uterus removed at operation A, normal uterus laid open. B, incision through which fœtus was removed. C, portion of gestation sac.

A midline, subumbilical incision was made and what appeared to be a uterus presented There was a band of tissue as thick as one's finger running from the left, across the front of the apparent uterus towards the midline, low down It was decided to do the usual upper segment Cæsarean operation skirting it This band of tissue proved afterwards to be the hypertrophied Fallopian tube of a normal sized non-parous uterus A macerated full-time fœtus was delivered and the uterine muscle was found to be very friable indeed and not capable of contraction An attempt was made to do a Cæsarean hysterectomy As the operation progressed it was found that the posterior part of the uterine muscle was firmly fixed to the posterior abdominal wall behind and to the omentum and transverse colon above By this time a circular part of the birth sac had been removed, when it was found that owing to the adhesions mentioned further progress was checked An assistant put a finger into the vagina, which protruded into the sac from which the fœtus came, and one was at a loss to know what the condition actually was A drain was pushed through the cervix into the vagina and another drain into the remains of the sac, and the abdomen closed.

On examining the piece of tissue removed it was found that a uterus of normal non-parous size had been removed, for the Cæsarean incision into the gestation sac (Fig 2) had skirted the left side of the uterus and Fallopian tube, and that on the left side of the Cæsarean incision was a piece of the wall of a rudimentary horn Therefore, what had happened was that a subtotal hysterectomy on a non-parous uterus had been done, and a piece of the wall of a rudimentary horn had been removed No opening could be found leading from the cavity of the normal-sized uterus into the horn The part of the horn wall that was left was in some places one inch thick The patient stood the operation very well and was given a blood transfusion of one pint from a group III. donor

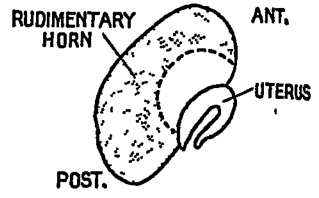

FIG. 3 —Diagram showing the parts removed at operation

Fig 3 shows the parts removed at operation The shaded part was left because of adhesions

The patient made a slow but steady recovery

We would like to express our thanks to Mr Gilliatt for examining the patient and establishing the diagnosis.

ANEURYSMAL DILATATION OF THE PULMONARY ARTERY IN A CASE OF CONGENITAL HEART DISEASE

By Horace Joules, M.D , M.R.C P Lond
PHYSICIAN TO THE SELLY OAK HOSPITAL, BIRMINGHAM

Dilatation of the pulmonary artery can rarely be diagnosed clinically. In the following case a fairly complete investigation of physical signs, with an electrocardiographic picture, left little doubt that this was the condition present, and a post-mortem examination demonstrated the underlying congenital abnormalities which accounted for it The literature of the subject has been adequately surveyed recently by D'Aunoy and von Haam,[1] who report the post-mortem findings in two cases, and also by Scott[2] in reporting the clinical and post-mortem evidence in another.

CASE RECORD

The patient, a married but nulliparous woman aged 37, was admitted to Selly Oak Hospital under my care on Feb. 27th, 1933 A congenital heart lesion had been recognised in early childhood, and some cyanosis and dyspnœa on exertion had been lifelong, but there had been increasing dyspnœa and œdema of legs and feet for the last three months.

CONDITION ON ADMISSION

A fairly well-built woman Cyanosis marked, orthopnœa, some clubbing of fingers The heart rhythm was regular except for occasional extrasystoles. Arteries not thickened; blood pressure 130/110 Considerable overdistension of veins of neck, and moderate congestive cardiac failure The precordium bulged somewhat. The apex-beat lay in the fifth space 4 in. from the midclavicular line, while the area of cardiac dullness extended ¾ in. beyond the right border of the sternum Palpation over the second and third left interspaces revealed an expansile pulsation, and systolic and diastolic thrills were palpable; dullness here extended 2½ in to 3 in from the midsternal line There was a long apical systolic murmur, while near the left border of the sternum and maximal in the third space a systolic murmur preceded a loud pulmonary second sound which was followed by a rough diastolic murmur Examination revealed nothing else of note

The blood Wassermann reaction was negative Electrocardiogram normal rhythm with high grade right ventricular preponderance and frequent extrasystoles Radiography the transverse diameter of the heart greatly exceeds the normal, the apex is tilted and suggestive of right ventricular enlargement while the right auricle is seen much enlarged The pulmonary artery presents a well-defined semilunar prominence on the left border of the heart, while the dilated right branch is well seen An oblique view with the barium filled œsophagus does not indicate any great degree of left auricular enlargement It is interesting to note too that the pulmonary notch of Bedford and Parkinson[3] is not discernible here, despite the known huge enlargement of the pulmonary artery

COURSE OF ILLNESS

With rest and digitalis the congestive failure disappeared and the patient, despite a poor cardiac tolerance, was able to leave the hospital in 28 days From this time until October, 1933, she remained free from severe symptoms, and attended the cardiac clinic On Oct 25th however, she was readmitted to hospital with a history of having been unconscious for 24 hours Examination showed the heart condition much as previously, while evidence of a right sided cerebral thrombosis was present Consciousness was not regained and she died within 48 hours

POST MORTEM FINDINGS

(Autopsy No 342/33) Defect of interauricular septum (persistent ostium secundum), aneurysmal dilatation of the pulmonary artery, pulmonary incompetence, defect of the interventricular septum Great enlargement of the right heart chambers Slight coarctation of the aorta

Viewed in situ the heart appeared greatly enlarged to right and left, the pulmonary artery formed an aneurysmal swelling above the left ventricle and the right ventricle and auricle were much enlarged (Fig 1)

The *pulmonary artery* and its branches are thickened, and there is slight intimal fatty atheroma The pulmonary cusps are larger and thicker than the aortic cusps, and the orifice greatly dilated producing relative incompetence The right branch is much dilated being larger than the descending aorta, while the left branch is only slightly smaller

The *aorta* is relatively small, and just beyond the left subclavian there is a definite narrowing so that its lumen only just admits the little finger tip The right subclavian and the right carotid open directly into the aorta at the innominate orifice

The *ductus arteriosus* is widely patent at its aortic end, but is conical, tapering rapidly so that its pulmonary orifice is only a narrow slit admitting the tip of the forceps with difficulty

The *interauricular septum* shows three apertures, one large and two smaller ones The largest aperture is oval, 3 × 2 cm, and is situated at the upper and posterior part

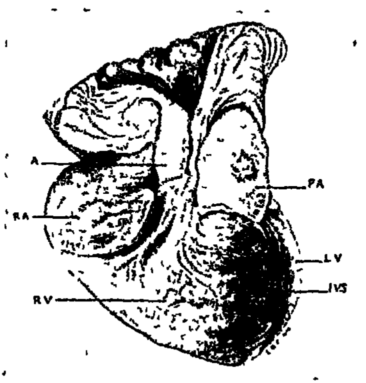

FIG 1.—Anterior aspect of heart showing the contrast between dilated pulmonary artery (P.A) and aorta (A) L.V = left ventricle I.V.S = interventricular septum R.V = right ventricle, and R.A = right auricle

of the septum immediately in front of the orifice of the superior vena cava, from which it is separated by a strong muscular cushion, there is a small *perforation in its* anterior and lower margin The two smaller apertures are situated below the larger one, and midway between it and the inferior vena caval orifice, and just above the Eustachian valve The larger orifice is oval, 1 cm in long diameter the smaller 0 3 cm The condition corresponds to Abbott and Kaufmann's case[4] and represents a huge persistent ostium secundum The venous openings are normal (Fig 2)

The *interventricular septum* is imperfect at the base, and there is an aperture 2 cm in diameter *opening into* the right ventricle just below the *septal cusp of the* tricuspid valve and into the left ventricle immediately below the aortic orifice, the aorta communicates with both ventricles above the aperture

The *tricuspid orifice* is much dilated, cusps thickened and a calcified deposit between two cusps The left auricle is relatively small, and the left ventricle is slightly enlarged and hypertrophied The right ventricle is much hypertrophied and dilated

Lungs—The pulmonary arteries and branches are hypertrophied with numerous fat flecks and streaks on intima, the cut ends of branches standing out like bronchioles on the surface of congested brown lungs no pneumonia Firm back pressure spleen hard purple nutmeg liver, the right kidney only is present with single ureter and single ureteric orifice in bladder There is a mass of fibrous tissue in the site of the left kidney containing rudiments of renal pelvis with below it a cystic mass 3 × 2 cm containing dark green fluid and having a duct leading downwards from it for 4 in and ending blindly Fibrosis of capsules of both ovaries is present The uterus is bicornuate Great congestion of brain area of cystic softening 2 cm diameter in right internal capsule

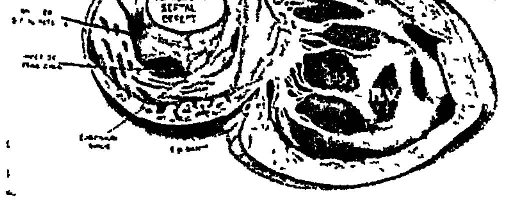

FIG 2.—The right side of the heart laid open showing the various defects described in the text

COMMENT

Dilatation of the pulmonary artery is common in congenital heart disease, and may be found in association with various malformations—for example, patent ductus arteriosus, valvular pulmonary stenosis, and with septal apertures When there is a large defect in the interauricular septum, the pulmonary artery is usually much dilated, often to aneurysmal proportions, while the aorta is hypoplasic The large size of the pulmonary trunk and the smallness of the aorta have been attributed to an abnormal division of the common arterial trunk. Great enlargement of the right heart chambers is always found in addition *The radiological picture is often characteristic*, and has been clearly described by Assmann [5] The special features are the small aorta, dilatation of the pulmonary artery, enlargement of the right heart, and absence of any left auricular enlargement.

These patients often reach adult life, and the physical signs may be scanty unless pulmonary incompetence develops, as in the present case Cyanosis is often absent until late and the lesion may not be recognised until adult life is reached Sometimes mitral stenosis of rheumatic origin is present in addition to the congenital defect in the interauricular septum

A clinical diagnosis of aneurysm of the pulmonary artery and patent interauricular septum was justifiable on the physical examination, while the autopsy revealed, as is so frequent in cases of congenital heart disease, a multiplicity of lesions Undoubtedly the *pulmonary aneurysm* here was the result of the much increased blood pressure of long duration within the pulmonary circulation caused by the multiple communications between the two sides of the heart

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2 Scott, R B THE LANCET, 1934, i , 967.
3 Parkinson, J , and Bedford, D E Ibid , 1934, ii , 337
4 Abbott and Kaufmann Cited by Abbott in Osler and McCrae's Modern Medicine, London, 1927, vol iv , p 676
5 Assmann, H Die Klinische Rontgendiagnostik der inneren Erkrankungen, 1928

MEDICAL SOCIETIES

SOCIETY OF MEDICAL OFFICERS OF HEALTH

A MEETING of the fever group of this society was held in London on Nov 30th, with Dr H STANLEY BANKS, the president, in the chair A discussion on

Puerperal Sepsis

was opened by Dr J. M GREENWOOD, who based his remarks on the cases treated in Monsall Hospital, Manchester, in the year ending July 31st, 1934. During this period, he said, 196 women were discharged from the puerperal sepsis unit of the hospital, and they could be classified as follows —

1	*Sepsis following full-time labour* . . .	112 cases
2	,, ,, abortion . . .	62 ,,
3	*Admitted as septic but not considered to be septic*	22 ,,

General peritonitis was found in 12 instances and septicæmia in 11 (anaerobic cultures were not performed), 4 women had a septicæmia associated with the peritonitis Of all the patients admitted 53 per cent had had a normal labour, and the labour was also described as normal in 55 per cent of the cases of peritonitis and 20 per cent. of the cases of septicæmia The main features of the cases of general peritonitis, which differed considerably from those enumerated in text-books, were as follows . gradual onset , anxious expression , tympanites , vomiting (50 per cent), diarrhœa (33 per cent.); rigors (75 per cent), pains, varying from none to rather severe , rigidity of abdomen not found in any case ; temperature usually ranged between 100° F and 103° F , pulse-rate ranged between 120 and 140 per minute Operation was performed wherever there was any doubt, and it was found that no abdomen had been opened unnecessarily Cases of peritonitis were not admitted much earlier than others, this probably being due to the difficulty in diagnosis ; but cases of septicæmia were admitted rather earlier There were 16 deaths among the 196 patients—a mortality of 8 1 per cent Four of the patients, however, died from causes other than puerperal sepsis and, as already stated. 22 cases were not considered septic ; hence it would be truer to say that 12 patients died out of 174 suffering from puerperal sepsis—a mortality of 6 7 per cent. In all the fatal cases it was observed post-mortem that the uterine wall was infiltrated with white cells In one specimen, obtained by subtotal hysterectomy from a patient with peritonitis *following perforation* of the uterus and abortion, a well-marked leucocytic barred line could be seen microscopically, this patient recovered.

Treatment aimed not only at the cure of complications but also at their prevention Glycerin irrigation of the uterine cavity was employed as a routine in view of the good results obtained at Monsall Hospital and reported by H. J Phillips to the Royal Society of Medicine in 1926 Phillips found that the incidence of complications was halved after glycerin douching was introduced, and the average stay in hospital was reduced from 48 to 26 2 days The duration of stay must vary with each medical officer, but all the patients in Dr. Greenwood's series were able to walk up and down a flight of stairs before discharge and the average duration was 25 4 days after full-time labours and 22 5 days after abortions Glycerin irrigation of the uterus was employed in cases of septicæmia and peritonitis, intramuscular arsenic was used in septicæmia and appeared to be of some value ; but antiscarlatinal antitoxin was used in only a few cases—e g , puerperal scarlet fever It was considered that the report of Benson and Rankin (THE LANCET, 1933, i, 848) on 114 cases of proved septicæmia, demonstrated *that serum was of no value in this condition.* The treatment of peritonitis resolved itself into early diagnosis and laparotomy, but the results were very unsatisfactory , it was found that all the patients with a hæmolytic streptococcal peritonitis died

Dr LEONARD COLEBROOK spoke of the results of treatment by antistreptococcal sera in cases admitted to Queen Charlotte's Hospital, London They afforded no evidence that the serum had been useful but rather suggested that it might *sometimes* have had a harmful effect He thought there was need for a careful investigation of this latter possibility and that nothing was to be gained by the continued use of the sera now available

Mr. JAMES WYATT said that he regarded diarrhœa as almost a constant symptom in general peritonitis, in some of Dr. Greenwood's cases it might have been present a day or two before admission

Dr R A O'BRIEN said that serologists would be deeply interested in Dr Colebrook's figures and deductions He did not think that the collected figures from the whole country would bear out the interpretation which Dr Colebrook drew from his series Though the old style of antistreptococcus serum showed no protective value in the laboratory, the modern concentrated streptococcus antitoxin used in scarlet fever would save the lives of rabbits given lethal doses of either filtrate or culture of hæmolytic streptococci, whether obtained from scarlet fever or puerperal patients It was difficult to accept the view that horse serum was harmful to human beings, for the huge series of cases treated in America with antipneumococcus serum, either concentrated or unconcentrated, had never shown a higher mortality among the serum-treated than among the controls

Prof JAMES YOUNG spoke of the route of infection in cases of peritonitis. There could be no doubt that spread along the open veins of the uterine wall was common and it was possible that the peritoneum became involved thence As evidence against a spread through the Fallopian tubes he referred to cases of criminal abortion in which acute peritonitis developed in the absence of any microscopic evidence of tubal infection Prof Young agreed that Dr Colebrook's figures seemed to suggest that the use of serum in puerperal sepsis might seriously aggravate the risk The findings were of such clinical importance that they demanded a thorough investigation of large and comparable groups of patients

Dr SAGE SUTHERLAND gave a survey of the case mortality from puerperal sepsis at Monsall Hospital during the 24 years 1910–33, showing a steadily increasing proportion of recoveries The highest death rate was 28 8 per cent in 1920 and the lowest was 7 0 per cent in 1923 Owing to arrangements made for the admission of cases from districts outside the city boundary the numbers of cases under treatment had increased in recent years Since 1926 certain cases had been notified as puerperal pyrexia, but only those in which the diagnosis of "puerperal pyrexia" had been changed to "puerperal sepsis" were included in the tables During the seven years ending in 1933 the incidence of septicæmia among 1130 cases of puerperal sepsis was 12 7 per cent, and septicæmia was diagnosed as the cause of death in 54 cases, giving a mortality-rate of 37 5 per cent Peritonitis occurred in 31 cases in this series showing an incidence of 2 7 per cent, and all of them were fatal During the last twelve months however, out of 9 cases of puerperal peritonitis 3 recovered This was attributed to resorting to operation at a much earlier stage and as Dr Greenwood had pointed out in no case had the abdomen been opened in error The incidence of the principal complications other than septicæmia and peritonitis were as follows —

Complication	Cases and incidence per cent	Complication	Cases and incidence per cent
Parametritis	65 (5 8)	Pelvic abscess	9 (0 8)
Phlegmasia alba dolens	51 (4 5)	" cellulitis thrombosis	7 (0 6)
Pulmonary embolism Cerebral	22 (1 9)	Pleurisy	5 (0 4)
Insanity	13 (1 2)	Mammary abscess	2 (0 2)
Pyosalpinx [illegible]	11 (1 0)	Streptococcal empyema	1 (0 1)

Dr Sutherland referred to minor septic infections associated with subjective symptoms as a possible source of morbidity resulting from the puerperium, the only sign leading to diagnosis in many cases being the objective symptom of subinvolution of the uterus, the absence of subjective symptoms was due to the insensitivity of the larger portion of the pelvic generative canal, sometimes spoken of as the "great silent area of the pelvis." In his opinion infection was more readily spread by the lymphatic drainage system than by the return blood circulation, and there was some analogy between puerperal infection and infection of the blood stream from a poisoned wound through the lymphatic system Thrombophlebitis usually remained undiagnosed until cerebral or pulmonary embolism occurred, and the absence of success in treatment was often due to the difficulty of definitely tracing the primary source of infection of the blood stream and lymphatic supply until the symptoms had progressed beyond the most favourable period for treatment The greatest hope lay in careful diagnosis and expert clinical knowledge, which could only be acquired by an extended experience of cases of this nature

The PRESIDENT recalled the crude methods of treatment of puerperal fever adopted in fever hospitals some twenty years ago, and stated that in Glasgow the case mortality rate about that time was constantly round about 30 per cent To-day they were told that the rate both in Manchester and London hospitals had dropped in recent years to 8 per cent Since the latter figure was exclusive of "puerperal pyrexia" cases it was difficult to resist the conclusion that solid progress had been made in the treatment of puerperal fever since the war What were the factors responsible for this achievement? It was now becoming quite clear that neither the old antistreptococcal serum nor the newer streptococcus antitoxin exerted any beneficial effect in puerperal septicæmia and peritonitis which were the forms responsible for most of the deaths Whether the antitoxin was of value as a prophylactic against these grave forms was he thought, neither proved nor disproved The other principal new factor in recent treatment was glycerin irrigation of the uterus. He understood that both the leaders in the discussion had adopted this method His own experience of it was entirely favourable, provided correct technique was employed The available evidence appeared to him to suggest that the substitution of glycerin treatment for former crude methods had had a favourable influence on the fall in mortality In one particular form—viz, puerperal scarlet fever, where presumably the Dick toxin was a principal noxious agent—treatment by intravenous antitoxin was in his experience, attended by strikingly favourable results Dr Colebrook's thesis that the use of serum in puerperal fever was actually harmful had been strikingly presented but caution must be exercised in drawing conclusions as to the use of serum from animal experiments He had frequently given hundreds of cubic centimetres of horse serum intravenously with apparently beneficial result, except perhaps in patients so ill as to be beyond the power of reaction The suggestion that certain horses appeared to give a toxic serum was one that called urgently for investigation In an extensive experience of the use of scarlatinal antitoxin intravenously he found, with all the makes of serum which he had tried, that particular batches were occasionally encountered which were entirely unsuitable for intravenous injection owing to the severe immediate reactions which they produced None of the suggestions so far advanced by serum makers afforded a satisfactory explanation of this phenomenon

ROYAL SOCIETY OF MEDICINE

SECTION OF OTOLOGY

A MEETING of this section on Dec. 7th, with the president, Mr E A **PETERS**, in the chair, was chiefly devoted to a discussion on

Meningitis of Otitic Origin

Mr. T B. **LAYTON** said he proposed to speak of meningitis originating from a previously uninfected ear—i e, secondary to a fresh infection of the middle-ear cleft Diagnostic lumbar puncture might sometimes be needed to show whether in a given case the condition was really otitic meningitis, or whether it was tuberculous or cerebro-spinal meningitis associated with a running ear In treatment, whatever the stage of the illness, the first essential was to remove the factory of micro-organisms, failing that, he did not think there was hope for any case, but if it were done he would not regard any case as hopeless After the mastoid operation he turned the pinna on to the skin of the face, fixed it there temporarily with a stitch, and used a gallon of saline solution to irrigate the part, two or three times a day for three days In the after-treatment the two requisites were absolute rest and irrigation with large quantities of fluid.

In the early stage of otitic meningitis nothing might be evident beyond rigidity of neck muscles—he disliked the term "meningism"—and at this stage lumbar puncture was unnecessary; it wasted time and might do harm. Cases seen by the otologist at this early stage should usually be saved. When Kernig's sign had appeared—as a rule, before the abdominal reflex was lost—a report on the cerebro-spinal fluid should be obtained within two or three hours The fluid might be clear, opalescent, or even thick, and if it was clear only the treatment common to all stages was necessary. If it was opalescent therapeutic lumbar puncture should be performed for the removal of fluid. If the patient was under the anæsthetic and operation was about to be performed he would not advise draining the theca; but on the following day a quantity of spinal fluid should be withdrawn, and this should be done twice daily for two or three days, by which time the patient was well on the way to recovery, or else the condition was hopeless If the neck was rigid and Kernig's sign was doubtful he considered the outlook grave, it was grave, too, if in such a case the patient complained of pain in the back Vomiting he did not regard as an early sign of meningitis, and he was not certain that headache was The headache of meningitis must be distinguished from that due to irritation of the external surface of the dura mater A patient who showed Kernig's sign and had lost his abdominal reflex or had headache was beginning to pass into the late stage, he lay on his side with his head thrown back and his tongue heavily furred Formerly Mr Layton had wondered whether it was worth while to tackle such a case, but after saving one or two which were apparently in extremis he did not now take a hopeless view of them Prognostic lumbar puncture was imperative, and the fluid must be examined for micro-organisms, if hæmolytic streptococci were found the chance of recovery was very small, but always one should consider what could be done besides the ordinary measures, including in this consideration thecal therapy He did not think, however, that the insertion of any drug (other than sera) into the theca was of any use

Mr **NORMAN JORY** said it had been found that a litre of cerebro-spinal fluid was formed in 24 hours It contained up to 5 lymphocytes per c mm, and the total protein increased as it passed down the cord Normal cerebro-spinal fluid was sterile, and a pressure of 200 mm or more must be regarded as pathological Of 39 cases of acute septic lepto-meningitis in one London hospital, most of the patients being children, 36 were fatal In 29 of the cases there was acute or subacute infection in the mastoid, and micro organisms were recovered from the cerebro-spinal fluid in 21 In 3 the labyrinth was found at autopsy to be infected In all the cases the chlorides were below 700 mg per 100 c cm.

Dr. C P **SYMONDS** held that neck stiffness and Kernig's sign were due to irritation of posterior nerve-roots, he did not regard them as signs inseparable from meningitis, and their absence did not necessarily mean that meningitis was not present In aseptic, serous, or sympathetic meningitis—which were all the same thing—the cerebro-spinal fluid was clear and contained a high proportion of lymphocytes, without any great reduction of chlorides The same kind of fluid, however, could be found at an early stage of septic meningitis, and this was important, for if the otologist waited for a thorough smear examination, or for the results of culture, the report would be of little practical use when it arrived At one time he had feared that lumbar puncture facilitated the passage of micro-organisms to the meninges, but this idea had been combated in the United States He still feared, however, that withdrawal of spinal fluid might lead mechanically to rupture of adhesions, and so favour the conversion of a local meningitis into a diffuse one He knew of a case in which a patient with an extradural abscess rapidly developed a diffuse meningitis after lumbar puncture The danger was much reduced if no more than 2 c cm was removed, and if a very fine needle was employed to ensure slow withdrawal Dr Symonds doubted the efficacy of serum in these cases, and his objection to its administration intrathecally was that it provoked a reaction of the meninges He thought that in every suspicious case the patient should be within easy reach of an aural surgeon before lumbar puncture was performed.

Mr **ERIC WATSON-WILLIAMS** (Bristol) said his experience had been that meningitis most commonly followed chronic otitis, or chronic recurring otitis He did not regard neck rigidity as of much prognostic significance, for five out of twelve cases had not presented that sign in the early stage, and three of these had died Nor did he think drowsiness to be a grave symptom, drowsy patients seemed to get well as often as the others Two factors which had a direct bearing on the prognosis were the presence of organisms in the fluid (not necessarily a fatal factor), and the interval between onset and operation. In three cases he had adopted the somewhat desperate measure of draining the cisterna pontis through the external auditory meatus, and one of the three had recovered Even if there were living organisms in the spinal fluid the outlook was not necessarily bad, provided that operation was promptly performed on the ear without exposing large areas of dura He did not think it was of any use to inject drugs into the theca, and he was not convinced of the value of sera To await the ordinary pathological report on fluid was to waste very valuable time before operating

The **PRESIDENT** said there were two groups of cases: in the first, which might be called "infection owing to approximation," the infection passed through all protecting barriers, the other group comprised those already mentioned in the discussion There were recorded cases in which the paths of infection included the labyrinth, the auditory nerve, the saccus lymphaticus, and the aqueduct of the cochlea He thought the condition known as "meningismus" was much commoner than was generally supposed

Mr SYDNEY SCOTT said he saw no harm in diagnostic lumbar puncture provided only 2 c cm of fluid was withdrawn He insisted that statistics should include only cases in which micro organisms were found in the cerebro spinal fluid otherwise the figures of different hospitals and workers would not be comparable, and many wrong conclusions would be inevitable Stiffness of the neck or retraction of the head he considered very important as signs of meningitis, but he would not diagnose the condition on these alone, and lumbar puncture should be done He referred to the case of a boy with acute otitis media who had violent headache but no head retraction Lumbar puncture was done, and the fluid withdrawn was clear, but the pathologist reported that it contained pneumococci Five days later the clinical signs of meningitis developed and after a long illness the boy died of pneumococcal meningitis In fatal cases he thought the cause of death was either encephalitis or septicæmia The so-called "lucky" cases were probably those in which the organisms were of relatively low virulence and the patient had virile antibodies Thecal drainage seemed to have only a limited applicability—namely, in cases where the infection could be traced through the labyrinth.

Mr F HOLT DIGGLE (Manchester) commented on the change in the treatment of this condition since eight years ago Various major operations were then carried out—not only translabyrinthine drainage, but also operations for approaching the foramen magnum Even at that time, however, he had felt that repeated lumbar puncture would remain the method of choice His own view was that if a patient had headache, perhaps with a little vomiting but with no other clinical evidence of meningitis, then, especially if the mastoid was tender, the primary focus should be dealt with, but he would not disturb the lumbar theca if there was a danger of spreading the infection in this way If the headache persisted 48 hours, lumbar puncture should be done Examination of the fluid would make it possible to decide whether lumbar puncture should be repeated Research might well be done he thought, to ascertain what antiseptic substances would pass into the cerebro spinal fluid from the venous circulation, there was no doubt that the choroid plexus was selective In a few of his serious cases he had relied on intravenous injection of antistreptococcal serum and repeated lumbar punctures in the belief that some of the serum would pass over

Mr C P WILSON asked whether it was Mr Layton's practice to expose the dura of both fossæ when doing the radical mastoid operation If so, how much bone did he remove?

REPLY

Mr LAYTON, in reply, said he never did a radical mastoid operation in these cases the only ones in which it might be necessary were those in which the inflammation had spread from the middle ear cleft to the meninges, far forward in the roof of the middle ear As regards diagnosis what he objected to was a more or less indiscriminate lumbar puncturing of children by house surgeons without a clear idea of what was expected from it He agreed that in the end it was the virulence of the organism which decided recovery or death He did not think that his hearers generally took the same view of neck stiffness as he did, if looked for, however, it could be recognised long before head retraction developed, and he had never seen a case of otitic meningitis in which it was not present It was usually absent, on the other hand, in nasal meningitis Practitioners should be given to understand that in order to save these cases of otitic meningitis the aural surgeon must be called in at the stage when the only sign was neck stiffness. If a patient had labyrinthine symptoms they were symptoms not of meningitis but of the lesion of access which preceded it, he thought that was the meaning of the vomiting in the early stage of acute cases A child might vomit because of acidosis, but if that was not the cause the vomiting must be looked upon gravely, especially when there was a running ear Antiseptics killed putrefactive organisms, but probably did not kill hæmolytic streptococci In cases where there was a sinus phlebitis it was best to deal with the meningitis first and the phlebitis later

Dr SYMONDS, in a brief reply, said he would be disinclined to accept a pressure reading as evidence of meningitis unless he knew of some abnormality in the cells of the cerebro spinal fluid

BRITISH INSTITUTE OF RADIOLOGY

IN the course of the eighth annual congress of the Institute, held at the Central Hall, Westminster, from Dec 5th–7th, the seventeenth Silvanus Thompson memorial lecture was delivered by Prof H H BERG of Hamburg, who took as his subject

Clinical Radiology of the Digestive Mucosa

Older methods of radiology, he said, concentrated chiefly on disorders of function and had to be developed in such a way as to give an unequivocal picture of the lesion They were based throughout on the solid ground of anatomy Dissatisfied with diagnosis thus afforded, he had endeavoured to improve the technique The first essential for his method of studying the mucosa was complete emptiness of the viscus, the best results were obtained if the inner surface was "dry" The stomach must be emptied, if necessary with a stomach tube, and the colon must be cleaned out with several enemas A thick watery suspension of opaque mixture was given by the mouth, but for demonstration of the details of the œsophagus a jam like consistency was preferable Small amounts only should be given—enough to fill the depressions of the mucosal pattern with a thin layer, leaving the tops of the folds free This thin layer could be distributed by giving various amounts of the suspension, by altering the position of the patient, and by graduated compression Quick changing from horizontal to oblique or erect position was of special value Radiograms of every important detail could be taken at a moment's notice The clinical aspect of the screened case should never be forgotten and the radiologist should be proud of his general clinical education It was better if he took his own case histories

Ordinarily the healthy mucous membrane was characterised by softness pliability active motility, and a moderate amount of secretion The œsophagus showed thin longitudinal folds especially in its lower part, the stomach showed longitudinal folds at the lesser curvature usually diverging at the beginning of the antrum and wave like folds at the greater curvature. In the small intestine the folds were apt to change rapidly from transverse to longitudinal during contraction In the large intestine there was enormous variability but generally the folds were longitudinal in contracted areas and transverse in dilated areas. Pressure from without caused displacement, flatness, broadening or disappearance of the folds Inflammation caused elevation, swelling, coarseness, and stiffness Atrophy and erosions were not generally visible Ulceration produced a crater with a smooth, elevated border and cicatrisation gave the appearance of stellate folds converging on the ulcer An infiltrating growth showed torpescence and loss of folds, an expansive one a sudden discontinuance of the folds New growth might also produce irregular protuberances and craters (Dr Berg demonstrated these appearances on the screen)

More than five per cent of gastro-intestinal hæmorrhages resulted, he said, from bleeding varices, generally the consequence of portal cirrhosis The condition was relatively common and was easy to diagnose if properly sought, even before symptoms had appeared. Generally the radiogram showed distorted worm-like elevations varying with respiration A thin layer of barium adhered to the mucosal surface longer than normal Leukoplakia of the œsophagus was characterised by small flat elevations corresponding to those seen in the post-mortem specimen

There were few better illustrations of the progress made in diagnosis than the results of diagnosing post-operative gastric disturbances The recognition of gastro-jejunal changes had reached a remarkable degree of accuracy and it was now as easy to diagnose gastro-jejunal ulcer as duodenal ulcer An inflammatory condition was indicated by swelling of the folds in the stomach and efferent loop ; sometimes the folds changed into turgescent cushions. The swelling of the margins of the opening caused narrowing of the lumen which was often interpreted as spasm—with which, indeed, it might be combined—but the essential factor was the œdematous swelling Gastro-jejunal ulcer occurred nearly as often after resection as after gastro-enterostomy Not even the best surgeon could prevent an ulcer in every case. Young patients with hereditary gastric trouble were especially liable to it, and a fungus was fairly often found The gastro-jejunal mucosa of the operated stomach very seldom presented a completely normal appearance A certain degree of elevation of the folds was very common but was not in itself sufficient for diagnosis Stiffness, coarseness, and severe swelling were nearly always the result of inflammation and often caused intermittent pain Crater-shaped ulcers were a frequent finding, especially in the neighbourhood of the anastomosis in the efferent loop The niche of the ulcer was not always visible immediately after the first swallow and the radiologist should wait until some of the barium had passed from the stomach, cleansing the surface of its mucus A second examination immediately after the first was extremely important for the demonstration of post-operative lesions The transverse colon should always be examined carefully although gastro-colic fistula was now rare

The new method of studying mucosal relief had proved its value especially in the diagnosis of malignancy The smallest cancer Dr. Berg had ever diagnosed was the size of a thumb-nail and nobody had believed him Six months later, when removed, it had been the size of a goose's egg There had also been progress in the differentiation of malignant and benign changes Chronic prepyloric ulcer might look very like malignancy Chronic gastritis might suggest cancer because of the stiffness of the coarse mucosa The verrucose form of chronic gastritis was regarded as precancerous There were cases which even the pathologist could not clear up without the microscope Errors were always possible if the viscus was not empty and it was quite normal to find a small amount of fluid in the fasting stomach Larger amounts of fluid, due to hypersecretion mixed with barium suspension, sometimes looked slightly spotted as a result of flocculi of mucus floating in the juice Larger filling defects were caused by retention of food , irritated gastric mucosa, especially if there were pyloric changes, could hold on to small particles of food, particularly vegetables Air bubbles moved and rose to the surface Careful screen work was always the best prophylaxis against error

Exhibition of Radiological Apparatus

This year's exhibition was marked not so much by outstanding innovation as by the development of ideas already executed, and by the consolidation of advances recently made. Last year saw the almost universal adoption of shock- and ray-proof tubes for all purposes; manufacturers this year were showing safer and better casings and other devices and consequential modifications One new invention does, however, promise to be of considerable importance to the practising radiologist, and that is the valveless rectifier shown by a well-known firm. Rectification by means of copper oxide-coated plates is no novelty in certain applications of electricity to industry, particularly in dust precipitation, but this year it has been applied to X ray generation for the first time. The current is passed through an arrangement of discs of copper oxidised on one side and polished on the other and connected in series This pile allows the current to pass in one direction but not in the other; it behaves in this respect in exactly the same way as the ordinary hot-cathode rectifying-valve Whereas, however, the valve deteriorates after a certain not very long period, the copper oxide rectifier never wears out Its extra expense is therefore more than justified The present rectifier does the work of a single valve, and developments are being elaborated to replace the more complicated multivalve rectifiers which are used for converting three-phase supply and for producing continuous high-tension current The model at the exhibition was rated for 200 KV and 30 ma current, and was oil-cooled It is available for ordinary diagnostic work and also in a modified form for deep therapy. The apparatus has already been adopted by a well-known municipal hospital, and the results of its use will be interesting news.

The opinions both of radiologists and of general practitioners are divided on the value of the ultra-light portable set for diagnosis in the home Some authorities consider it a valuable adjunct to clinical investigation; others an expensive, possibly dangerous and probably misleading toy There seems no reason why in the hands of the practitioner who has a definite flair for its use it should not be of value, provided he recognises its and his own limitations. The latest of these mobile units packs in a neat wooden suitcase which weighs, complete, 43 lb The tube and transformer are mounted together and encased in a shock- and ray-proof cover about the size of a quarter-plate box camera This is fitted with a handle and can be manipulated as easily as the ordinary electrical hair-dryer and almost as easily as a Kromayer lamp Its applicator can be pushed deeply into the groin for a radiograph of the surgical neck of the femur, or into the axilla for a shoulder examination, or held up against the face It can also be used on a stand It is designed to work at 70 KV and 10 ma

Another piece of apparatus on which expert opinion is divided is the combined couch and screening stand Some radiologists object to these ingenious pieces of mechanism as being likely to alarm a nervous patient, whose courage is already strained by an unfamiliar environment Others feel that this drawback is unimportant compared with the advantage of saving space and expense, and still more, during a delicate screen examination of—for instance—the intestinal tract, of being able suddenly to move a patient from one position to another in order to observe the subtle changes in the appearance of the mucosa The smooth, silent movement of these couches is a tribute to the mechanical perfection of their manufacture, and is comparable to the effortless passage of a fish through water A difficulty has, however, been introduced with the shock proof tube This is as a rule fed by leads encased in heavy rubber pipes, and it is almost impossible to prevent these from dragging and thereby upsetting the fine balance which is so necessary To meet this objection one firm has introduced a tilting couch containing a ray-proof tube which is not fitted with the ordinary shock-proof casing but is rendered shock-proof by enclosing the whole of the under-couch space in a substantial metal shield, which is earthed The shock proofing thus extended is as efficient as that provided by the ordinary tube casing, and is free from the disadvantage of the heavy leads

Some visitors to the exhibition may have hoped to find apparatus capable of running at more than the standard 200 KV Heartening stories are coming from various hospitals abroad and, recently, in this country, about the results of irradiation with ultra short X rays, approaching the gamma rays of radium Such apparatus seems, however, to be at present in a more or less experimental stage, and no exhibitor in London has so far ventured to standardise it There is a definite technical reason for this sticking-point in the neighbourhood of 200 KV—it is actually at about 180, the 200 KV tube on full output being theoretically somewhat overloaded Should the value of the higher voltages become more established, no doubt manufacturers will make the extra effort required to produce apparatus capable of generating them

REVIEWS AND NOTICES OF BOOKS

Psychology and Life

By LESLIE D WEATHERHEAD, M A, Certified Teacher of Psychology under the Board of Education With forewords by SIR HENRY B BRACKENBURY, M D, LL D, Vice President, British Medical Association, and WILLIAM BROWN, M D, D Sc, F R C P, Wilde Reader in Mental Philosophy in the University of Oxford London Hodder and Stoughton 1934 Pp 320 5s

THIS century has witnessed the development of an insight into mental processes which has changed our attitude not only to the victims of "nervous breakdown" but also to their robust and impatient critics This new knowledge provides common ground between those concerned with the care and cure of the spirit, the mind and the body, and it is encouraging to see the speed with which having once been assimilated, it is being interpreted in popular books The latest of these to reach us is one of the best of those by non medical authors—in so far as Mr Weatherhead has set himself to enlighten, simply and yet without patronage, "ordinary folk" whom he assumes to be ignorant of current psychological conceptions He takes pains to show that these are not only compatible with religious belief, but that their study is now essential to the minister who aspires to be of real help to his flock In a preliminary chapter on psychology, religion and healing he sets out his main thesis that while often neither religion nor medicine can cure symptoms arising from mental conflict until their cause is realised by the patient, when this stage has been reached religion can be a great therapeutic agency He pleads convincingly for better psychological training for ministers school masters and doctors, while endorsing this plea we would suggest that he underrates the quality of the teaching on the treatment of the neuroses and psychoneuroses nowadays available to medical students The advice to "pull yourself together" or to "make an effort" which he justly condemns is usually given not by the patients' medical advisers but by relatives and friends inconvenienced to exasperation by their state

In subsequent chapters he deals adequately with the material and province of psychology, the levels of the mind, the importance of the unconscious, the energies of the mind, repression and self-control, the inferiority complex, the mind of a child, fear, anxiety, phobia and worry, and depression and irritability These later chapters will satisfy the demand for concrete examples and for advice applicable to personal problems to an extent unusual in books of this kind, especially from the section on worry is the reader likely to get practical help Another advantage in the later chapters is the omission of the numerous quotations and footnotes giving references to other authorities which spoil the continuity of the earlier sections In a future edition Mr Weatherhead might consider whether a bibliography at the end of each chapter would not serve his purpose, without interrupting the easy flow of the message he has distilled from his wide reading.

Acute Intestinal Obstruction

By MUNROE A MCIVER, M D, Surgeon in Chief, Mary Imogene Bassett Hospital, Cooperstown, N Y. New York Paul B Hoeber 1934 Pp 430 $7 50

THIS considerable monograph is divided into three parts. In the first the varieties of intestinal obstruction encountered are described This occupies about one half of the volume, and is rendered the more valuable in that clinical histories with comments by the author are interpolated It is a very satisfactory section In it we find a discussion of the newer views of pathology, the changes in body fluids, and the bearing of physiology upon the phenomena observed All the new knowledge which has accrued since the great classical work of Treves appeared nearly thirty years ago is summarised In the second part the diagnosis and the treatment of the condition are fully considered Such questions as the value of morphine the diagnostic assistance of X rays the re place of enterostomy, and the use of saline infusion all receive adequate discussion. A captious critic might say of this section that its usefulness is somewhat impaired by the open-minded attitude of the author. It is true he is not dogmatic, but he provides all the known data with references for adjudicating on any of the multitude of problems of treatment which may arise. Indeed, on reading the third section, on the causes of death in acute intestinal obstruction, it becomes evident that our knowledge of this aspect of the subject is nebulous and vague. Dogmatism is out of place where there can be nothing but clinical impressions, and where experimental findings are so ambiguous

This book is an important contribution to surgical literature, for in it all knowledge of any account pertaining to acute intestinal obstruction is collected. It should be on the shelves of every surgical library.

A Text-book of Histology

Second edition By ALEXANDER A. MAXIMOW, late Professor of Anatomy, University of Chicago; and WILLIAM BLOOM, Associate Professor of Anatomy, University of Chicago. London: W. B. Saunders Co., Ltd. 1934. Pp. 662. *30s.*

OF recent text-books on histology, this work, initiated by the late Prof Maximow and completed by his colleague Prof. Bloom, is by far the most stimulating and instructive, and it is not surprising that there should be a demand for a second edition within three years of its appearance. The book has been thoroughly revised. Certain sections have been rewritten, notably that on nervous tissue by Prof. Judson Herrick, and that dealing with the physiology of the female genital system by Prof. G W. Bartelmez. There are 49 new figures, and the inclusion of many new references at the end of each chapter will be welcomed. A remarkable feature of this revision is that the book is actually reduced in size, and contains 150 fewer pages than the first edition and some 70 fewer illustrations Part of this reduction has been achieved by setting many of the details in small type, but everywhere one notes a vigorous pruning and condensation. Whether this is an improvement or not depends on the taste of the individual reader. Apparently it has been carried out in response to the representations of many teachers who found the original volume too large for students beginning the study of medicine, but this reason appears to us to be entirely inadequate. The work is of far too high an order ever to become a mere cram book, and there are other publications which serve this purpose May we hope that in the preparation of future editions Prof Bloom will resist any further temptation to cater for those who prefer their meat potted? As it stands, his book has an educational value which we hope it will always retain.

Parenthood: Design or Accident?

Third edition. By MICHAEL FIELDING. London: Williams and Norgate, Ltd. 1934. Pp 208. *2s.*

THE first edition of this book, published in 1928, was reprinted four times; the second, published in 1930, was reprinted nine times. These facts testify to the usefulness of the little volume which is now well known to the medical profession The author, a medical man who writes under a pseudonym, has successfully performed a difficult task; he has written a book which satisfies the requirements both of the lay reader who seeks guidance in the conduct of the intimate affairs of his own life, and of the doctor who desires information on how to advise his patients. The book contains valuable additions which bring it up completely to date; it includes a full list of privately run birth-control clinics to whom doctors may wish to refer their patients, and it summarises in clear language the latest researches which, it is hoped, may yield the improved methods of the future The author has, moreover, not hesitated to set out, where he deemed appropriate, the names and addresses of those manufacturers of contraceptives whom he has good reason for regarding as reliable By running the risk of being suspected of interest in the sale of certain products, which suspicion would obviously be unjust, he has added to the value of the book to many medical readers who are at a loss when asked to advise their patients on the purchase of contraceptives

Of the many books written on the practical problems of birth control, this is likely to be the most serviceable to medical readers

The Myth of the Mystic East

By Lieut.-Colonel R H. ELLIOT, M D, Sc D., F.R C S, late of the Indian Medical Service London: Blackwood and Son, Ltd 1934. Pp. 301 *7s 6d.*

"I have not the least hesitation," says Colonel Elliot, "in stating my conviction that the Mystery of the East is a myth . . . Mystery fades and mysticism vanishes as soon as you get to grips with your subject. An ordinary and simple explanation is invariably available in the long run, though it may have to be waited for until the necessary data have accumulated" This, in a nutshell, is the message of this readable and stimulating book. Beginning with research upon the nature of snake poisons, Colonel Elliot, himself an expert conjurer, was led to examine the problems of native conjuring and then to investigate the religious and other customs of the Indians As chairman of the occult committee of the Magic Circle, an office held for 15 years, he has had the opportunity of investigating the claims of many persons to have witnessed the rope trick; and he sums up his conclusions in a chapter on this subject which is calculated to instil a healthy scepticism in the reader. But though Colonel Elliot denies that any of the phenomena he witnessed demand supernatural explanations, he has nevertheless wondered at some of the things he has seen "I must confess to have been astonished," he writes, "at the feats of the sword-swallowers and fire-eaters . I have watched these men blow out volumes of smoke and fire from their mouths and wondered how their mucous membrane can stand it . . Again, I have seen a man push a stiff sword blade down his gullet The most elementary knowledge of anatomy made it obvious that it must have entered his stomach, yet he did not appear to suffer the least inconvenience from it." These phenomena while appearing to Colonel Elliot to be "natural" (in the sense of not being supernatural) are acknowledged to be remarkable The last five chapters of the book deal with snakes Admirers of the works of Rudyard Kipling will especially enjoy a chapter on the mongoose and the cobra From attempts made to measure the toxicity of different snake venoms, it has emerged that the venom of the Australian tiger snake is 24 times more deadly than that of the cobra and 125 times more deadly than that of Russell's viper

This book will be of special interest to those who have resided in India, but also to all who have wondered whether the phenomena which have puzzled so many visitors would stand the test of scientific investigation

THE LANCET

LONDON SATURDAY, DECEMBER 15, 1934

OVULATION AND CONCEPTION

IT is important to know at what point in the menstrual cycle ovulation takes place, for the time of ovulation indicates the time when intercourse may be fruitful Accurate knowledge would thus be useful to innumerable people, and one would think that it could be readily obtained, but in actual fact the objections to direct experimental investigation of the period of fertility in the cycle, and to frequent observation of the ovaries, has made it necessary to rely on imperfect evidence sometimes deviously sought Fortunately the results of various unrelated inquiries nearly all point the same way, and there is now a balance of opinion that ovulation occurs during the intermenstruum—or, allowing liberal limits at some time between the 10th and 19th days of the 28-day cycle, counting from the day on which menstruation begins The studies on which this opinion is based comprise observations of the ovaries at laparotomy, some (but not enough) histological examinations of ovaries and endometrium removed at known times in the cycle, the recovery of ova from the uterine tubes (in six cases, ranging between the 12th and the 19th days), and certain rather unreliable estimates of the probable ages of early embryos[1] There are also a few acceptable data on the period of fertility in the cycle—provided mainly by K OGINO in Japan and H KNAUS in Austria—and some information obtained by KNAUS in experiments on the refractoriness of uterine muscle to pituitrin The views of this worker are again brought to the notice of English readers by the publication of an excellent and well illustrated translation of his latest book, 'Periodic Fertility and Sterility in Woman'"[2]

The belief that conception can occur only during a few days in the mid interval is based on three assumptions first, the life of the sperm must be brief, secondly, the life of the ovum must be correspondingly short, and thirdly, ovulation must take place *spontaneously* about the middle of the cycle In his new book Dr KNAUS sets out his reasons for thinking these assumptions sound In considering the viability of the ovum, he draws attention to the circumovular deposition of albumin which begins soon after rupture of the follicle and which presumably makes penetration by sperms increasingly difficult, he also refers to the ingenious experiments performed by J HAMMOND, which show that the fertile life of the rabbit ovum is but short Unluckily the evidence about spermatozoa is neither so convincing nor so direct, based as it is on observations, partly in vitro, on motility and fertility at high and low temperatures, but the conclusion that "the spermatozoa lose their fertility within 48 hours of coitus under the influence of the abdominal temperature to which they are exposed in the female genitalia" is supported by analysis of acceptable data on times of conception KNAUS's own observations (already mentioned) on the time of ovulation are concerned with the refractoriness of uterine muscle to pituitrin when it is under the influence of luteal secretions He first ascertained that after ovulation the rabbit uterus ceases to contract in response to injections of pituitrin, and then by extirpation experiments he showed that this change in reactivity is due to the presence of corpora lutea Having thus provided himself with an index of ovulation, he proceeded to study the motility of the uterus of healthy women, and arrived at the conclusion that "in women with normal reproductive physiology ovulation always takes place on the fifteenth day *before* the onset of the period" His data were all consistent with the view that ovulation occurs spontaneously and not, as in some animals, as a sequel to coitus In addition he adduces direct evidence in favour of his belief that fertility is limited to a few days in the middle of the cycle, citing the clinical experience of other medical men besides himself According to KNAUS, there is no doubt that the "law of fertility" is borne out in practice, and he counters contrary statements by affirming, with some reason, that they are usually founded on miscalculated cycle dates and other inaccuracies of testimony He lays emphasis on the lack of precise information about the duration of the menstrual cycle, and states that it is impossible to predict the period of fertility in a woman unless her menstrual rhythm is exactly known Regarding irregular cycles, he offers the following advice "The ovulation date of an irregular cycle is that period of time which falls between the two ovulation days of the shortest and the longest cycles respectively, the cycles being recorded for at least 12 months", but he presents few of his data on this important problem

In the time that has elapsed since Dr KNAUS's book went to the press, further oblique but harmonious observations have been reported by Dr RAPHAEL KURZROK and his co-workers[3] in New York In a study of the urine of ten women, over an average of two cycles each, they found that the routine Aschheim Zondek test gave the prolan A reaction during a variable short period near the mid point of the cycle. Hitherto it has been believed that prolan substances are not excreted in the urine of non-pregnant women in quantity sufficient to give positive results in the routine biological tests, and KURZROK and his collaborators conclude that the appearance of prolan A in these women is related to the coincident occurrence of ovulation, and that the prolan indicates the elaboration of an ovulation-stimulating substance by the anterior lobe of the pituitary The latter part of this interpretation seems questionable, it is not yet known whether or not a specific hypophyseal hormone is a factor in the mechanism of ovulation, and in view of the fact that excretion of œstrin is increased during the later phase of the menstrual cycle, when the luteal hormones are exercising their influence, it is perhaps more reasonable to argue that the sudden mid-interval excretion of a follicle-stimulating gonadotropic hormone indicates the beginning of a post-ovulation phase of activity of a luteinising gonadotropic hormone Whichever be the correct interpretation, it certainly seems justifiable to suppose that the excretion of prolan A in the middle of the cycle is related to ovulation Indeed, apart from its stimulus to more elaborate work along the same lines, the chief significance of KURZROK's report is that it provides a little further evidence that ovulation as a rule takes place near the mid-point of the menstrual cycle It remains regrettable that the testimony of women about menstrual dates related to operations and about menstrual dates of conception should usually be so unreliable from the scientific point of view, for, when due allowance is made for Dr. KNAUS's natural enthusiasm,[4] it must be admitted that our present view of the time of ovulation in man is established only on a number of unrelated and separately weak supports This being so, it is especially valuable to know from experimental studies, such as those of C G HARTMAN, and S. ZUCKERMAN and A S. PARKES, that in other primates ovulation is definitely a mid-interval event. Since direct determination of the time of human ovulation is at present out of the question, and since adequate information about woman's periodic fertility is not yet available, it is certainly desirable that more work be done on monkeys, not only to determine more exactly the time of ovulation and the period of fertility, but also to elucidate in more detail their relationship to man—both in anatomy and physiology.

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[1] Intermenstrual pain and bleeding (Mittelschmerz) which is occasionally experienced by women for a short period about the middle of the cycle is generally supposed to be related to ovulation (see Jour Amer Med Ass, Oct 20th 1934, p 1253) but the relation has not been established scientifically Its value as support comparative data from non human mammals (see Hartman Amer Jour Obst and Gyn, 1930 xix 511) is doubtful

[2] Periodic Fertility and Sterility in Woman a Natural Method of Birth Control Translated by D H Kitchin and Kathleen Kitchin M B B S, Vienna Maudrich 1934 Pp 162 and 41 [illegible]

[3] Kurzrok R, Kirkman I J, and Creelman M Amer Jour Obst and Gyn September, 1934, p 319

TWO FACTORS IN BUSINESS LIFE

"AN account of research work carried out by the National Institute of Industrial Psychology during the years 1921–34"[5] may surprise the reader not so much by the solution of problems connected with the human factor in industry as by the statement of problems that call for solution Yet this is inevitable Minute investigation of the physical qualities and behaviour of the inanimate materials used in modern industry is accepted as a commonplace of scientific research, but apart from a routine physical examination of workers on entrance to some occupations the selection of human material has been by rule of thumb A misfit must adjust itself, continue to endure and cause friction and inefficiency, or be scrapped, probably at some cost of happiness or health. One finds accordingly that the work of the institute is directed first to the development of tests to be applied in vocational guidance and selection so that failures through misfit may be diminished as far as possible The advantages of such tests, both to employer and worker, are obvious, and though in a general account details must be lacking yet a copious bibliography indicates the wide range of occupations that have been studied with the object of making specific adaptations of general principles. The comparison between inanimate and human can be carried further. The engineer presumably studies the conditions under which a machine produces the best results, but only of recent years is it recognised that it is as profitable to study the influence of the working environment upon human efficiency. Ventilation, temperature, sanitation and the like have been regulated by our Factory Acts for many years, but even now not all employers recognise that a healthy environment pays. Moreover, the comfort of the worker, the making of his task easy by correct adjustment of materials and machinery, the reduction of boredom and fatigue are equally important, though not within the field of operation of the law, and here the institute finds scope for more activity It is probable indeed that the adjustment of mechanical factors may become systematised and the intrinsic human problems of industry will claim fuller attention; a reference to temperamental factors and character as determining occupational success (p 11) indicates this trend, and so does the Industrial Health Research Board's report (No. 61) on "The Nervous Temperament in Industry"

Increase of output is a natural result of improvement in working conditions but is a convenient and agreeable measure of results rather than the primary aim of industrial psychology Efficient and smooth working in any organisation must depend upon satisfactory human relationships, and in the industry of to-day the cultivation of such relationships is coming to be regarded as essential, the increasing employment of welfare workers and the encouragement of social and sporting activities being obvious steps in that direction From the graduate school of business administration at Harvard University comes a description of systematic methods of studying the workers' point of view, the understanding of which is plainly of first importance to industrial psychology. Acknowledging the work, along the same lines, of our Industrial Health Research Board, Prof Elton Mayo[6] tells how there was developed a method of interviewing—confidential as regards individuals—directed towards "the discovery of opinions that referred themselves to highly individual and personal experiences and situations" Experience soon showed that the employees wanted it, it eased their minds, it helped them to revise their too personal opinions, and the research division of the firm realised that the whole obscure problem of human inter relation in an industrial organisation was concealed somewhere in the dark area Among other results of his research Mayo found that the benefit derived from rest pauses, shortened hours, provision of refreshment and such like was a secondary matter as compared with the establishment of a favourable "temperamental" inner equilibrium of the workers Other investigators attached to the same graduate school[7] have made the generalisation—simple enough when attention is directed to it—that in every industrial establishment, in addition to a "technical organisation" which appears to the management as representing logically and technically what the actual organisation is there is also a "social organisation" which refers to the actual personal relations existing among the employees, and between employees and supervisors This latter includes relations on the common human level—friendships, antagonisms, and so forth—as well as larger social configurations such as collective attitudes, practices, and beliefs

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[4] Knaus makes light of the dangers of promising much on the basis of our present knowledge His attitude has recently been questioned by T Koller, who regards the existence of a demarcated period of fertility as likely but so far unproven (Schweiz med Woch, Sept 8th, 1934, p 827)

[5] From the Institute, Aldwych House, London, W C 2

[6] The Human Problems of an Industrial Civilisation New York The Macmillan Company

The second working system is at least as important a matter of study as the first, and a curious action in the Chancery Division, reported on another page, illustrates the unfortunate result of a clash between them A firm of wire manufacturers were sued by some employees who declared that the presence of "efficiency experts" watching them not only hindered them in their work but even affected their nerves and spoilt their sleep Setting aside the interesting psycho pathological questions involved in these alleged phenomena, we must agree that the attempt to alter or even study one working system without taking into account the other produced an emotional, even a neurotic, reaction on the side of the men A skilled interviewer using the methods described by Elton Mayo could obtain from these men material for a new chapter in industrial psychology, and surely a knowledge of their emotions and mental attitudes is as necessary to industrial efficiency as a knowledge of (say) the ductile properties of the wire with which they work

HEALING OF TUBERCULOUS CAVITIES

THERE are certain types of pulmonary tuberculosis which respond well to a régime of simple rest But though prolonged recumbency under sanatorium conditions may suffice for the healing of even widespread disease a dip in Jordan is never a welcome prescription and the exhibition of patience is less popular than the exhibition of therapeutic measures The older sanatorium methods were often successful, but the introduction of collapse therapy marked the end of a policy that was apt to degenerate into one of laissez-faire The new method was sound in theory, for it implied rest to the diseased lung It was encouraging in practice, for its most impressive effects were demonstrated in the more acute forms of the complaint And it supported the patient's morale, for it necessitated far more careful supervision, whether in or out of sanatorium, than he had been accustomed to The recurrent operative procedures required to maintain pulmonary collapse were accompanied by an impressive ritual, to which was added a suggestion of scientific accuracy due to the measurement of insufflated air in cubic centimetres and to the exact reading of a water manometer There is thus no need to wonder at the early popularity attained by artificial pneumothorax or for surprise if at times the means has overshadowed the end To day, no responsible worker denies its value—collapse therapy remains our only effective form of active treatment, but because it is all we have to offer there is a risk it may become a routine What then are our objects in trying to collapse the diseased lung? The prevention of spread of disease, the promotion of healing in a lung, set at rest and the closure of cavities may all result from pulmonary deflation The tendency towards excavation in tuberculosis is so pronounced that progressive disease is almost always, if not always, associated with cavity formation With little exaggeration the treatment of phthisis has been said to be the treatment of cavities We may gauge the success of our efforts to a considerable degree by our success or failure to banish ring-forms from the X ray picture and tubercle bacilli from the sputum It is noteworthy that sputum examination and X ray examination usually tell the same tale

In the practice of any art economy of means is desirable if the best results are to be secured, and medicine is no exception to the rule We must secure our object with the minimum of interference if the risks of treatment are not to exceed the risks of disease Radiology has taught us that many cavities will heal spontaneously if the patient will submit to rest in bed for a period of several months Nor is this only true of small cavities Vomicæ the size of a golf ball or a hen's egg may in suitable circumstances completely resolve without the aid of collapse therapy, for the capacity to heal does not depend upon the size but upon the character of cavities Three varieties of cavity are commonly seen in skiagrams of tuberculous lungs The earliest recognisable vomica is revealed as a clear area in the centre of a haze of more or less uniform density This form of cavity does not appear to be enclosed by a wall of its own, it resembles a cavity in a Gruyere cheese The second type of cavity is round, oval or sometimes pear shaped As revealed by the skiagram it is bounded by a wall, two or three millimetres thick, the density of which is not much greater than that of the preceding haze The latter has usually cleared by the time a cavity of the second order has developed The third variety corresponds with a late stage of the disease when fibrosis predominates As seen in the post-mortem room or as photographed in the X ray department, it has an irregular contour and a wall of much greater density than that of the second type Our knowledge of the pathology of the cavities of early tuberculosis is limited, for we cannot study them in the post-mortem room The appearance of the fibrous-walled cavity is familiar in skiagram and cadaver: its pathology is sufficiently well known. An appropriate scientific nomenclature demands accurate knowledge and it is difficult to decide what terms to apply to cavities of the first and second order. Dr LOUIS H FALES and Dr E A BEANDET have recently suggested [1] exudative, productive, and fibrotic as qualifying terms for the three varieties of cavities as revealed by X ray examination, but it would perhaps be wiser, in our present ignorance, to refer to them simply in numerical order The assumption that three stages of development are represented by the three types is based on the experience gained from serial skiagrams and clinical observation, it is therefore probably not far from the truth.

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[7] Roethlisberger, F J, and Dickson, W J Studies in Industrial Research Technical & Social Organisation in an Industrial Plant

The experience of American practitioners agrees with that of European colleagues The first two types of cavity are frequently observed to close and heal under a simple régime of rest, usually carried out in a sanatorium. The third or fibrotic type may become sealed off and enclosed by dense scar tissues, but seldom heals without operative compulsion. The treatment of this type is therefore collapse therapy, and we may note in passing that a simple artificial pneumothorax will seldom suffice to overcome the obstruction due to adhesions over cavities whose wall impinges on the periphery When collapse therapy is proposed for the treatment of cavities of the third degree we must be prepared for disappointments unless we have also the means at our command for intra- or extra-pleural pneumolysis Cavities of the first and second order often close spontaneously if the patient is confined to bed The time required for healing, as determined by X ray control and disappearance of tubercle bacilli from the spit (or more commonly its cessation), varies from a few weeks to several months. Self-discipline is therefore essential if success is to be attained Such discipline is however only irksome in the earlier weeks; if these can be supported with tolerable resignation after-treatment is usually easy Rest treatment obviates the risks inseparable from collapse therapy and when healing is complete there is neither pleural thickening nor mediastinal displacement The deformity which so often follows the effusions associated with artificial pneumothorax is never seen There is thus something to be said for the older forms of treatment, provided that X ray control is maintained The disadvantages of expectant treatment are the risk that extension of disease may occur in a still functioning lung, that apparent healing and cavity closure may be followed by breakdown and reappearance of cavities, and that a longer period of confinement to bed is necessary

The patient with a collapsed lung may be allowed liberties which are denied to those whose every movement must cause a measure of pulmonary strain. No general rules can be formulated; at every stage of the disease the individual must be considered Social circumstance, psychological condition, family history must be taken into account as well as the nature, extent, and degree of activity of the pulmonary disease Certain general considerations should however guide the plan of campaign When the fibroid type, as is commonly the case, is associated with middle or later age, we have to consider whether collapse therapy is justified Disease may become stabilised despite the persistence of a hard-walled cavity and occasional expectoration of bacilli. Tolerable health may be enjoyed for an unlimited period if the patient is able to live a quiet and sheltered life But if collapse therapy is undertaken treatment must not be relaxed until the offending cavity is closed If we are not prepared to complete the work it had better not be undertaken at all. The prognosis in adolescent phthisis is so grave that collapse therapy is justified directly X ray examination and sputum tests indicate that cavitation has occurred. If carried out at an early stage before adhesions have formed and when the disease is still of purely, exudative type a year—only two or three months of which need be spent in bed—may suffice to close cavities and arrest the disease The risks of artificial pneumothorax are in most instances not comparable to the risks of extending disease, and such extension may occur with alarming rapidity in a functioning lung. In the exudative types of disease occurring in the post-adolescent years a short period of observation under X ray control is usually desirable Disease of exudative type, unlike proliferative disease, is never static It progresses or resolves, and serial skiagrams taken at monthly intervals are our best guide in prognosis If resolution is occurring, if new foci do not appear, conservative treatment may be sanctioned, unless the patient's social circumstances are such as to limit the period of treatment If resolution is delayed or there is evidence of advancing disease artificial pneumothorax should be undertaken, supplemented if necessary by section of adhesions or phrenic avulsion if cavitation persists

These conclusions are supported by the observations of FALES and BEANDET who found that in a series of 90 cases occurring in early middle age "young or exudative cavities responded most favourably to bed-rest," 66 per cent healed under this treatment Of the second-degree cavities, 43 per cent healed, while only 17 per cent of those of the fibrotic type yielded to rest-treatment Those who have had experience of the very satisfactory results which may be secured by a régime of rest will support their contention that half measures will not suffice; bed-rest should imply "absolute control and supervision during the entire 24 hours, with rest ranging from 21 to 24 hours in bed and absolute rest where response is slow to lesser amounts" This may seem a counsel of perfection, but it is one to which a patient who realises that his life is at stake will submit The year of rest which may be required is less than half the period of recumbency often needed for the healing of a diseased spine or hip-joint, and it is a small price to pay for the arrest of pulmonary tuberculosis

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[1] Amer. Rev. of Tuberc., xxx, 2, 225

ANNOTATIONS

VITAMIN B AND PERNICIOUS ANÆMIA

No one has yet discovered the exact nature of the extrinsic factor which interacts with Castle's intrinsic factor (secreted by the stomach) to form the principle which prevents or cures pernicious anæmia It is present however in considerable quantities in meat and yeast, and the fact that all the substances that contain it are also sources of the heat stable rat growth promoting fraction of water soluble vitamin B (i e vitamin B_2) led Strauss and Castle[1] to suggest that the two are similar if not identical Wills[2] subsequently published observations from which she concluded that B_2 could not be the extrinsic factor, for she found that egg white extract previously digested with normal gastric juice was ineffective in the treatment of a single case of Addisonian pernicious anæmia Her work has lately been criticised, however, by Miller and Rhoads[3] who maintain that the egg white extract used was not rich in vitamin B_2 and also that it was not proved that the single case investigated would have responded to oral treatment in any form it was assumed that because an improvement of blood values followed the injection of liver extract a similar improvement would have followed administration of the same material by mouth Miller and Rhoads in repeating Wills's observations used freshly coagulated egg white and found that a definite though not maximum reticulocyte response was obtained when 100 g predigested with 150 c cm of normal gastric juice was given daily Thus egg white was a source, though not a particularly good one, of vitamin B_2, and 5 g was found to contain one rat growth unit of the vitamin Rice polishing concentrate containing one rat growth unit of B_2 in 2 g also produced hæmopoiesis in a daily dose of 15 g predigested with normal gastric juice Miller and Rhoads do not claim that B_2 and the extrinsic factor are identical but they suggest that white of egg must be considered as a possible source of the extrinsic factor, whatever its nature, while if B_2 is the extrinsic factor it is evidently effective in small quantities

It has been generally accepted that probably yeast owes its hæmopoietic action to its high content of extrinsic factor, rather than to the presence of the fully formed pernicious anæmia factor which is found for example in liver Marmite is therefore thought to be effective only in those anæmias in which the extrinsic factor alone is lacking Ungley and James[4] however find no parallelism between the vitamin B_2 potency of yeast extracts as tested in rats and their effect upon hæmopoiesis in pernicious anæmia They also refer to cases which show only a slight response to vitamin B_2 concentrates specially prepared by Peters and O'Brien but respond well to extracts of marmite poor in this vitamin These observations suggest, as does the previous work of Wills that vitamin B_2 is not the extrinsic factor—or that marmite contains some other hæmopoietic factor besides extrinsic factor Conclusive proof of the identity or lack of identity of extrinsic factor and vitamin B_2 can only be hoped for when both substances have been isolated in pure form The relationship of the two to a marmite hæmopoietic factor will also be clarified if the latter is isolated

GASTRIC ACIDITY IN RHEUMATIC CHILDREN

In an ingenious demonstration of increased excretion of acid in the urine of rheumatic children, Dr W W Payne[1] has lately provided support for the theory of an "acid diathesis" in juvenile rheumatism The subject is approached from another angle in some observations by Dr Jessie Ogilvie[2] on gastric secretion in this disease She began with a careful study of 60 "healthy" children—most of them convalescent at the Sick Children's Hospital in Glasgow—and made records of the free hydrochloric acid, total acidity, total chlorine, peptic activity, and in some instances the hydrogen ion concentration of specimens obtained by the usual fractional method of gastric analysis She then proceeded to a similar investigation of nearly 100 rheumatic patients All of these were afebrile and convalescent and the group included cases of chorea The object of the inquiry was to seek possible support for the allergic theory of rheumatism, it was argued that this would be forthcoming if the rheumatic group showed an abnormal proportion of children with achlorhydria or hypochlorhydria, *for* deficiency in gastric acidity is reported in conditions such as asthma which are generally accepted as allergic Actually the figures obtained did afford some support for the theory, since of the totals 12 *per cent* of the rheumatic compared with 5 per cent of the normals had lowered or absent hydrochloric acid in the test meal fractions Closer analysis however, shows that the rheumatic group exhibited more variations with a larger number of extremes, indeed, if one looks for *hyper*chlorhydria one finds it in 24 per cent of the rheumatic and only 13 *per cent* of the normal children Hence it is possible also to read the evidence as favourable to the "*acid diathesis*" view of rheumatism True, the average total chlorine content of the fasting blood proved to be similar in each age period for the two groups of children, but previous attempts to show any tendency in the blood of rheumatic children towards the acid side have mostly failed—perhaps, as Payne suggests because the body is able to maintain a remarkably constant acid-base balance so long as its excretory organs are in working order It remains possible that the wider variations found in Ogilvie's series and the increased urinary output of acid noted by Payne are signs of some real abnormality of acid base metabolism which underlies the rheumatic disorders of early life

THE MARIE CURIE HOSPITAL

The claims of the Marie Curie Hospital to be a fitting memorial to the discoverer of radium—not a sentimental static one but a severely useful scientific instrument for the relief of patients suffering from cancer—were eloquently set out by the Prime Minister at a meeting held at 10 Downing street on Dec 6th He spoke he said as a layman and outsider knowing only enough to be proud of the results achieved by the capable team of medical women controlling the hospital and to share the conviction of the Medical Research Council and other vigilant bodies who helped with subsidies the research in progress that any support, moral or material, offered to the hospital would be well used Lord Horder, as chairman of the advisory committee of the British Empire Cancer Campaign, whose duty it is to select institutions for support, added his tribute of confidence Even before the Marie Curie Hospital was founded the campaign had made a substantial grant each year to the radium clinic, operating at four hospitals staffed by women, from which it arose in 1929, and since then the financial support and the loan of radium had been continued The day had gone by when radium was used with reckless abandon and empiricism, except by irresponsible persons The irradiation treatment of cancer had become an applied science which required most scrupulous attention if the best possible results were to be achieved. It might well be that the faculty of women to maintain as a routine very careful regard to detail was responsible for the fact, recorded in the latest report issued by the Medical Research Council of the results obtained in the various radium centres working under their auspices, that the percentage of cures obtained at the Marie Curie hospitals worked out considerably higher than those at any other centre[1] Miss Louisa Martindale, M D, the next speaker, traced the history of the hospital, describing its origin, growth, and the international reputation it has achieved amongst the clinical research centres dealing with the treatment and cure of cancer. The enlargement of the hospital and the addition to its equipment last year of a deep X ray therapy plant to supplement radium therapy where required has made the provision of increased public support an urgent problem if the work is not to be curtailed Mr Frederick Lonsdale and Mrs Walter Runciman supplied further cogent reasons why such support should be forthcoming From our knowledge of the present needs of the Marie Curie Hospital and of the development of its activities which is essential to the fruition of the work in hand, we endorse the appeal

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[1] Strauss M B, and Castle W B Jour Amer Med Assoc [illegible] 1930
[2] Wills, L, and Naish A THE LANCET 1933 i [illegible]
[3] Miller D K and Rhoads C P New Eng Jour Med [illegible]
[4] Ungley C C and James G V Quart Jour Med 1934 [illegible]

[1] Arch Dis Childhood August 1934 [illegible] THE LANCET [illegible]
[2] Arch Dis Childhood Oct 1934 [illegible]

NERVOUS SYMPTOMS OF TAPEWORM INFECTION

THE practical importance of cysticercosis as a cause of brain disorders, particularly in persons who have resided overseas, has been amply demonstrated at the military hospital, Millbank, during the past few years. In a remarkable contribution[2] just a year ago to the Royal Society of Tropical Medicine and Hygiene Colonel W. P MacArthur made it clear that much of what had been called idiopathic epilepsy in soldiers who had served abroad must be credited to invasion by the cysticercus of the pork tapeworm In the October issue of the *Quarterly Journal of Medicine* H B F. Dixon and D W. Smithers give an account of the clinical symptoms and course of each of 71 proved cases of cysticercosis, most of them studied at Millbank These detailed summaries, which hold evidence of much labour, illustrate the amazing variety of the nervous manifestations caused in this disease, though in the majority of instances the presenting symptoms are those of epilepsy The figure given in the title of this paper can represent only some small proportion of the true number of military cases of cysticercosis occurring during the period covered by the authors' survey, and, as a matter of fact, this figure has already been considerably increased during the several months since they wrote. The difficulties in diagnosing this disease—even when it is remembered and looked for—are much intensified by the fact that for practical purposes exact diagnosis is dependent on the formation of at least one superficial cyst which can be detected and excised, or by recognisable depositions of calcium in degenerated parasites, both of these being entirely fortuitous happenings, and the latter of unusual occurrence in the brain It cannot be emphasised too strongly that a negative radiogram of the skull is of no value in excluding this disease Accumulating military experience goes to indicate that light degrees of infestation are common and may even be the rule in cysticercosis In many patients the number of parasites which can be detected is very small, perhaps only one or two in the whole body, in many others who from their history and symptoms are almost certainly victims of cysticercosis no parasites at all can be found Past experience encourages the hope that the suspected diagnosis will eventually be confirmed in some considerable proportion of such cases if they can be kept under observation and re-examined as required The group of suspects includes at present over 40 men whose radiograms, although not yet diagnostic, show appearances indistinguishable from those of cysticerci in early stages of calcification Colonel MacArthur a year ago expressed his belief that a properly conducted search in homes for epileptics and other institutions would disclose subjects of unsuspected cysticercosis called by some other name His prophecy has been justified by the detection of such institutional cases in countries as far apart as Burma, Rhodesia, and North America, as well as in this country.

OWNERSHIP OF CHEAP HOUSES

IT is one of the most encouraging features of our time that the standard of living demanded for working class households has steadily risen as the facts of the housing situation have become widely known, so that a state of things lately accepted almost without question is now regarded as intolerable The lowest standard considered acceptable is well in advance of the average of pre-war provision, and it may be readily imagined that the building of new and better houses has had a detrimental effect on the owners of an earlier kind of working-class property But the factor of ownership has hardly received the attention it deserves This country is in urgent need of an increase, estimated at not less than a million, in the number of houses which can be let at a rental not exceeding 10*s.* a week, including rates In a supplement issued with the *Daily Telegraph* of Nov 26th, and in No 7 of the *Phœnix*, published at about the same time, Lord Balfour of Burleigh has explained why, though the building of such houses may well be undertaken by private enterprise, their ownership should be in different hands The actual cost of a three-bedroom non-parlour house is such that, given cheap land, rents can be fixed at a level within the reach of the lower-paid wage-earner, but only by limiting the rate of interest on capital employed for the purpose to something like 2¾ or 3 per cent—hardly a commercial proposition Hitherto the vast majority of low-rented houses outside the slums have been owned by local authorities, but there are drawbacks to an indefinite extension of municipal housing It cannot be a wholesome thing in the public life, Lord Balfour of Burleigh remarks, for millions of municipal voters to be tenants of the local authority, elected members of which are dependent on their votes for return at the polls The result would necessarily be to make rent levels and other questions of management an issue at municipal ections. The Moyne Committee, it will be recalled, roposed to entrust public utility societies with onsiderable powers and responsibilities and it has et to be seen what place will be found for them in e new Housing Bill. The work of these societies as hitherto been limited by their resources; their uccess has been of a kind which cannot fairly be xpressed in numbers. The Rev. Nigel Scott, rganiser of the St. Pancras House Improvement ociety, said last year that if all the slums were anished in five years' time we should be just at the eginning of our task—and the Minister of Health as recently said much the same thing. The slum-weller transferred to a decent home requires much ducation and friendly guidance in adapting himself o his new surroundings, and Octavia Hill's words evidence before the Select Committee of 1882 e still true—"You will never reach the poor except hrough people who care about them." Enlightened anagement on Octavia Hill's lines has been carried ut by public utility societies with results creditable oth to themselves and their tenants. The eagerly nticipated Bill promises to put forward proposals n an unprecedented scale; it is much to be wished hat public utility societies may not be overlooked n this vital aspect of ownership.

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[1] See THE LANCET, Nov 3rd, p 1019

[2] THE LANCET, 1933, ii, 1431.

AMINO-ACID THERAPY IN MUSCULAR DISEASES

THE primary muscle dystrophies have in the past yielded little to treatment. This group of disorders, which includes the myopathies, myasthenia gravis, dystrophia myotonica and myotonia congenita, is uncommon; but many physicians know and dread the sensation of helplessness which they arouse. There was thus abundant cause for the interest which greeted the claim of Milhorat, Techner, and Thomas[1] in 1932 that considerable improvement followed the exhibition of glycine in muscular dystrophy.

It has long been known that creatinuria is present in this group of diseases, and as long ago as 1909 Levene and Kristeller showed that increased protein intake resulted in increased creatine excretion in such cases. The older conception that creatine formation could not be increased by the feeding of proteins and amino-acids was finally exploded in 1929 by Brand, Harris, Sandberg, and Ringer, who showed that feeding with glycine caused an increase of 40 per cent. in creatine excretion. On the assumption that in muscular dystrophy the muscles were unable to fix creatine, Thomas and his colleagues treated patients with glycine in doses of 10–20 g. per diem. They found that an increase of creatinuria resulted which was followed by a decrease, this decrease being associated with sensations of "rumbling and crawling" in the affected muscles and by considerable subjective and objective improvement. During the last two years many reports have been published on the treatment of muscle diseases with glycine. The majority support the contention of the original observers that glycine is of value in myopathy. All are agreed that it is useless in muscles showing atrophy secondary to lesions of the lower motor neurone. Tripoli and Beard have used glutamic acid instead of glycine as it is cheaper, forms creatine in larger quantities in rats, and is non-toxic. They [illegible] tion may be of value in differentiating between primary and secondary muscular atrophy. Similar favourable results have quite recently been reported by Stone and Ables.[3] Cuthbertson and Maclachlan,[4] in a valuable and critical paper, record nine cases of myopathy treated with glycine, eight of which showed general improvement in strength and weight and some local increase in power in the affected muscles. During the past month Tripoli, McCord, and Beard[5] have again emphasised the prognostic importance of increased creatine excretion on exhibition of amino-acid. They record 34 cases treated on these lines; patients with myopathy and myasthenia gravis showed much benefit, but they also claim symptomatic improvement in some neuropathic types of myatrophy. In a debate subsequent to their communication opinions differed a good deal.

In myasthenia gravis the reports are less unanimous. W. M. Boothby[6] recorded several cases from the Mayo Clinic where improvement followed glycine therapy. But myasthenia gravis is notoriously a disease in which spontaneous remissions are frequent and render difficult the assessment of the value of treatment. D. McAlpine[7] reported a case in which improvement seemed more definite with ephedrine and glycine than with ephedrine alone, while glycine alone produced no effect. He suggested that the effect of glycine was to enhance the action of ephedrine on the sympathetic terminations. But progress was not arrested in his case and the patient died. S. K. Kostakow[8] has described improvement and increased creatinuria in a patient with dystrophia myotonica following glycine and testicular extract together, glycine alone having had no effect, and also improvement following glycine combined with acid sodium phosphate, but from neither alone in a case of Charcot-Marie-Tooth's disease.

S. Nevin's[9] work on the changes in the acid-soluble phosphorus-holding compounds in muscle at rest and during contraction offers no chemical basis for these claims. Examining specimens of muscle obtained by biopsy during rest and contraction and comparing the results with normal controls he finds no changes from the normal in myasthenia gravis. In two cases of myopathy the total acid-soluble phosphorus and the creatine-phosphoric acid were low, and though this latter substance showed a subnormal breakdown on stimulation of the muscle, the figures were less abnormal than in a case where the myatrophy was secondary to a neural lesion. He suggests that, from these observations, the chemical changes in the muscle are secondary to the atrophy in myopathy and that it is not a condition primarily dependent upon a disturbance of creatine metabolism. By way of explanation of the clinical improvement reported in such cases he offers the suggestion that the specific dynamic action of the amino-acid stimulates muscle metabolism. The observations of Costedoat and Anjaleu[10] are of interest in connexion with the disturbance present in myasthenia gravis. These workers found that in rabbits whose muscles were rendered poor in glycogen by phlorhizination a myasthenic electrical reaction was produced and they suggest that the underlying fault in this disease may be in failure to reconvert lactic acid [illegible] glycine therapy seem to warrant a more extensive trial of this method of treatment, though it has no sound theoretical basis.

CHEYNE-STOKES BREATHING

AT the beginning of the year we referred[1] to a paper in which J A Greene of Iowa distinguished between two clinical types of periodic breathing, one characteristic of increased intracranial pressure and the other of cardiovascular disease A case recorded by Garnot, Caroli, and Fiehrer of Paris[2] now suggests that the Cheyne-Stokes respiration of cardiac disease may be explained by pressure on the respiratory centres Their patient was suffering from an attack of auricular fibrillation, accompanied by considerable œdema, and ultimately lapsed into a comatose condition with conspicuous Cheyne-Stokes breathing Lumbar puncture revealed a considerable increase in the pressure of the cerebrospinal fluid, and relief of this was followed by a return to consciousness and normal respiration Garnot and his colleagues draw attention here to what may have been a fortunate coincidence—namely, the simultaneous occurence of a copious diuresis and a disappearance of œdema They regard the abnormal respiration as due to cerebro-meningeal œdema obstructing both the venous return from the brain and the circulation of cerebro-spinal fluid, and point out that while lumbar puncture may alleviate the symptoms, only subsidence of the œdema can remove the ultimate cause of the increased intracranial pressure. The sequence of events is very clear in this case, and there is no reason to dispute the interpretation advanced Cheyne-Stokes breathing occurs, however, not only in cerebral, renal, and cardiovascular disorders, but in the very young and very old, especially during sleep; it is also seen in hibernating animals during the winter. Another common type is that due to lack of oxygen in the inspired air and met with in mountain sickness; the conventional interpretation of this is that the increased ventilation necessary to ensure an adequate supply of oxygen washes carbon dioxide out of the alveoli, thereby removing the normal stimulus to respiration, and produces a period of apnœa which persists until the combination of oxygen-lack and mounting carbon dioxide is sufficient to initiate a further respiratory cycle This purely chemical explanation is obviously applicable to special cases only, in most instances there exists some impairment of the respiratory centre which is at least contributory. As we pointed out before,[1] there is probably a series of respiratory centres in the brain-stem, each under the control of those above it; moreover, the lower ones show a type of periodic activity similar to that encountered in some animals, particularly aquatic mammals. The partial release of these lower centres would be highly probable in descending impairment of the central nervous system, and might well account for periodic breathing, The work of Greene and of Lian and Deparis[1] shows that in man not only the brain-stem, but the cerebrum is involved, in certain patients stimulation of the attention is sufficient to restore normal breathing. It is easy to visualise the reverse process taking place during sleep, and indeed it is doubtful if periodic breathing in this state is confined to children and the aged, those who have had the misfortune to be kept awake by the snoring of an otherwise normal person must have noticed the rhythmical waxing and waning of the sound This may not amount to Cheyne-Stokes respiration, which is characterised by definite apnœa, but the difference may be only quantitative

A PARIS TRANSPLANT

THE former fortified zone embracing Paris has, since the war, been given over to a vast experiment in housing The architects of the Habitations à Bon Marché (H B.M) financed by the municipality have built upwards rather than sideways, their creations running to six or eight storeys in imposing blocks Early in 1933 they housed over 74,000 persons, 36,000 of whom were children under 16, and 12,000 adolescents between 16 and 20 Although these buildings have been supplemented by parks for children, under the supervision of trained welfare workers, it was feared in some quarters that the density of population created by this system of architecture might favour the spread of infectious diseases Fortunately a voluntary organisation had been started in 1925 to provide these buildings with a medico-social service staffed by trained social workers. The statistical information provided by this service shows that the general mortality of the H.B M. was only 78 per 10,000 inhabitants in 1933, against 150 for the whole of France Pulmonary tuberculosis was however responsible for 19 per cent of all the deaths in these quarters in 1933, the corresponding figure for the whole of Paris being 12 per cent; the disparity reflects the low general mortality in these quarters and the high proportion of juvenile population. It is important to note that the tuberculosis mortality has been falling since 1930 faster in the H B M than in the rest of Paris, the deaths per 100,000 inhabitants were as follows.—

	1930.	1931	1932	1933
Paris	195	187	170	156
H.B M	238	191	176	155

From a survey of these and other figures[1] Dr Y. de Hurtado draws the conclusion that much of the tuberculosis recognised as such in the H B M is their heritage from the slums whence their tenants were recruited. To the sunny, airy, and otherwise sanitary buildings is due the credit for its rapid decrease

A MEDICAL LIBRARIAN

THE death on Dec. 4th of Mr. Hubert E Powell, F S A, librarian of the Royal Society of Medicine, was announced in our last issue Mr Powell had been 27 years in the service of the Society, first as assistant and from 1920 as chief librarian During his term of office the library increased to an extent which made it the largest of its kind in the British Empire, and it offers facilities for study not yet reached by other medical libraries In all this progress Mr Powell played a prominent part His knowledge of medical bibliography was comprehensive and accurate and at all times it was placed ungrudgingly at the disposal of every reader In the preparation of many medical works for the press his hand can easily be traced, and there must be hundreds of doctors who first learned from him the importance of accuracy in medical bibliographies Mr Powell may truly be said to have lived for the R S M. library and its development will long remain a monument to his care and efficiency

AT a meeting on Dec. 11th the Prince of Wales, as president of King Edward's Hospital Fund for London, announced that for the third year in succession the "ordinary distribution" of the Fund was being maintained at £300,000, and with £20,000 in special grants towards the pensions scheme the total to be distributed was £320,000.

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[1] THE LANCET, 1934, i, 142

[2] Bull et mém Soc méd hôp de Paris, Oct 29th, 1934, p. 1313

[1] Rev. de Phtisiol, Sept–Oct., 1934, p 671.

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXXI.—PROGNOSIS IN PRIMARY GLAUCOMA

PRIMARY glaucoma is a disease with an ætiology which is still obscure. It is diagnosed by the presence of the known symptoms and signs of increased tension and has to be distinguished from secondary glaucoma, in which the tension is raised by some definite ocular disease. We are not here concerned with diagnosis, but with prognosis, and for this purpose it is necessary to consider the various clinical types—viz., (1) the fulminating type, (2) the recurring congestive type, (3) the chronic form with congestive attacks, (4) the chronic simple or non-congestive type. At one end of the scale is the severe congestive fulminating form which may end in blindness in a few days, and at the other the simple chronic glaucoma, which comes on insidiously with no congestion, no pupil changes, and often with very little increase of tension.

Predisposing Factors

Age.—Primary glaucoma affects people who are getting on in years. It is most common after 50, but is occasionally met with in the early thirties, and cases have been recorded in the twenties. The greater frequency of the disease in elderly people and its progressive tendency is explicable by local causes, as shown by Priestley Smith. The chief of these is the increasing circumference of the lens throughout life, with narrowing of the circumlental zone, so that swelling of the vitreous or increase of pressure there cannot be relieved readily by traffic of fluid forward from this structure.

Sex.—Women are affected more commonly than men in the congestive cases, but the sexes are equally involved in chronic glaucoma. This frequency in women is probably associated with their more highly strung temperament, for there is undoubtedly a vasomotor factor present in the ætiology of the congestive type and possibly in the chronic type as well.

General Factors.—Theoretically and experimentally vasodilatation of capillaries in the eye produces an increase in intra-ocular pressure, and clinically excitement is often a factor in producing an attack. Many such instances could be cited, such as mental excitement in political discussion, nervousness in anticipation of an operation, the operation itself or an operation for glaucoma on the other eye. These all point to a vasomotor cause of glaucoma, and it is thought that some histamine-like substance may be a factor in determining vasodilatation in the ciliary and choroidal areas. It follows from this that patients with glaucoma should be instructed to lead quiet healthy lives and to limit the use of their eyes as far as possible, and that response to this advice must be taken into consideration when thinking of the prognosis. There is no evidence proving that hyperpiesis is a factor in producing glaucoma.

Dilatation of pupil.—There is a healthy fear in many practitioners that the use of a mydriatic in a patient over 40 years of age is contra-indicated for fear of glaucoma. An attack is occasionally, but very rarely, produced thereby, and it is very unlikely that such an attack will be induced except in an eye which is the subject of glaucoma or which is predisposed to [illegible]. Apart from actual glaucoma the dilatation produced by cocaine or homatropine can be readily counteracted by one drop of eserine. The mydriasis produced by atropine, however, cannot be counteracted for some time, and, where glaucoma is present, a congestive attack may be induced which will yield to nothing short of operation.

Progress in Untreated Cases

Glaucoma, *once commenced, tends to progress*; congestive attacks recur and pass over into Group 3 (see above) and the chronic cases gradually increase in severity. As a general statement one may say that untreated glaucoma passes on to absolute glaucoma in which the eye is hard and sightless, the pupil dilated, the episcleral vessels distended, and the disc deeply cupped. This final stage is reached after a period which necessarily varies with the type of the disease. The first attack of a fulminating glaucoma may produce it in a week or even in a day. Recurring congestive attacks may occur every few months or at weekly intervals and may pass over into chronic and then absolute glaucoma in a few years or months. Chronic glaucoma with congestive attacks may bring loss of vision in a similar period, but chronic simple glaucoma may make very slow progress indeed, coming on so insidiously that the patient is unaware of the increasing loss of field until it is, perhaps, reduced to central vision only after 10 or 15 years.

Reaction to Treatment

It is necessary to consider separately the *prognosis* of the various groups in response to treatment.

ACUTE FULMINATION

The acute fulminating type calls for correct treatment as a matter of urgency. This treatment will aim at the contraction of the pupil by means of eserine and cocaine drops, applied at first half-hourly (eserine sulphate 1 per cent., cocaine HCl 2 per cent.), leeches to the temple, rest in bed, hot applications, and free purgation with salines. If after a few hours the pupil commences to contract the intra-ocular tension will be found to be decreasing, and the attack will pass off with gradual return of useful vision, but with some permanent impairment.

If on the other hand these measures are unsuccessful in reducing tension, operation becomes a necessity. Twenty-four to forty-eight hours of really high tension may be enough to damage the visual function of the retina beyond recall. If skilled hands are available, an iridectomy or corneo-scleral trephine operation will be performed, according to the predilection of the surgeon. A large proportion of such cases do well and regain good visual acuity, but a certain number react badly to operation, and so the prognosis must always be a guarded one. If skilled help is unavailable and the tension remains high for more than 24 hours, the tension may be reduced by a posterior sclerotomy as a temporary measure. In this operation the sclerotic is punctured by a Graefe knife through the ciliary body at a point 6.5 or 7 mm. from the corneo-scleral margin; before withdrawing the knife it is rotated through 90 degrees to permit escape of vitreous. This operation would appear to be a safe one; it seldom causes any hæmorrhage into the vitreous and does not cause retinal detachment, as might be feared. Unfortunately the resulting decrease of tension is only a transient one but the operation can be repeated. Some surgeons use it also as a preliminary to iridectomy. This sometimes has the advantage after a few minutes wait of a clearing of the hazy cornea and a deepening of the very shallow anterior chamber; both of these factors will facilitate the making of the section for a glaucoma iridectomy The advantage is, however, arguable The soft globe may make the section difficult, but when the globe is hard, the sudden relief of pressure may cause subluxation of the lens towards the wound, and the formation of cataract.

RECURRING CONGESTIVE

Milder recurring attacks of congestive glaucoma yield to similar therapeutic measures, but the tendency to glaucoma is present and will get worse as time goes on, so that there will always be a danger of a more serious attack with permanent damage to vision. In such cases several recurrences will compel the surgeon to advise an operation for the formation of a safety-valve from the anterior chamber into the subconjunctival space (e.g, corneo-scleral trephining). On the whole the results of operation in such cases are good and the attacks of congestion cease Some schools of ophthalmology prefer iridencleisis or cyclodialysis as their procedure for this type of case.

CHRONIC WITH CONGESTIVE ATTACKS

The commonest type is the gradually progressive form of glaucoma with increase of tension, cupped disc, and loss of visual field, combined with occasional exacerbations of tension. Such cases have a progressive course and are not controlled by eserine; if neglected they go on to blindness Trephining or some such operation is indicated, and the results vary very much Mostly the results for permanent relief of tension are excellent, but in a number of cases the tension returns and further operation is indicated, which may again be unsuccessful Where the relief of tension is permanent the vision will not deteriorate further, but will not improve Occasionally, although the tension appears to have been relieved satisfactorily, the deterioration of vision still goes on. The usual explanation of such cases is that an optic atrophy has been started by the glaucomatous process and has continued although the tension has been relieved It is more probable that the tension has not been reduced to normal or that it passes above normal from time to time

When the loss of visual field encroaches close up to the macula operation occasionally causes loss of macula vision This is scarcely ever seen after the operation of sclero-corneal trephining, but was more common in the days when iridectomy was the operation of choice

CHRONIC SIMPLE

The chronic simple glaucoma without more than a suspicion of tension is controlled by miotic drugs for a time, and in some cases for many years In such cases one will watch the fields of vision and will only advise operation when they are becoming diminished in area In my experience such cases do well with operation, but I know that all ophthalmic surgeons do not agree with me on that point.

Conclusion

Finally we must remember that an eye with glaucoma is a sick eye and that a certain proportion of such eyes (though a small proportion) resent operative interference On the whole the less damaged the eye, the better it will stand operation, and therefore surgery should not be postponed too long Any intra-ocular operation is beset with some risk, and the age and general condition of the patient must be taken into account, together with the condition of the eye, before arriving at a considered judgment in any given case

FRANK JULER, F R C S,
Surgeon, Royal London Ophthalmic Hospital,
and Ophthalmic Surgeon, St Mary's and
Queen Charlotte's Hospitals

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg Capts J G Danson to *Victory* for R N B., F L Smith, O B E, to *Pembroke* for R M Infirmary, Deal, and G R McCowen to *Nelson*, as F M O on staff of Commander-in-Chief, and as Specialist in Hygiene, on recommg

Surg Comdrs N. B de M Greenstreet to *Drake* for R N B, G E D Ellis, O B E, to *Titania*, L S Goss, O B E, to *Drake* for R M Infirmary, Plymouth, F E Fitzmaurice to *Britannia*, L F Strugnell to *Pembroke* for R N B; and K A I Mackenzie to *Resolution*

Surg Lt-Comdr W. V Beach to *Dragon*

Surg Lt-Comdr (D) D G Eglinton to *Vernon*

Surg Lt (D) A W Y Price to *Drake* for R N B

ROYAL NAVAL VOLUNTEER RESERVE

P de B Turtle and R F B Bennett entered as Proby. Surg Sub-Lts and attached to list 2 of the London Division

ROYAL ARMY MEDICAL SERVICE

Col. B H V Dunbar, D S O, M D, late R A M C, retires on ret pay

Lt-Col W F M Loughnan, from R A M C, to be Col

ROYAL ARMY MEDICAL CORPS

Maj J C Sproule, O B E, to be Lt-Col

TERRITORIAL ARMY

Capt J R Robertson is secd under para 135 T A Regs

Lt J W Laird to be Capt

B C Jennings and E C Murphy to be Lts.

TERRITORIAL ARMY RESERVE OF OFFICERS

Capt. J Lamberton having attained the age limit retires and retains his rank, with permission to wear the prescribed uniform.

ROYAL AIR FORCE

Flying Offr H Bannerman to R A F. General Hospital, Palestine and Transjordan

INDIAN MEDICAL SERVICE

The undermentioned officers have vacated appts in India —

A D H & P—Lt-Col F R. Coppinger, O B.E., R A M C

D A D P—Capt T C Puri, I M S.

The undermentioned appts have been made in India —

A D H & P.—Maj J A Manifold, D S.O, M B, R A M C

D A D P—Capt M K Afridi, I M S

COLONIAL MEDICAL SERVICE

The following appointments have been made: Dr J C St G Earl becomes Senior Health Officer, Uganda; Dr A R Lester, Senior Medical Officer, Uganda, Dr H M O Lester, Director of Tsetse Investigation, Nigeria, and Dr E A Neff, Senior Medical Officer, Cyprus

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A RESEARCH BED —On Dec 6th Princess Arthur of Connaught unveiled at Charing Cross Hospital a bed which Lord Wakefield has endowed It will be known as the "Wakefield research bed" and has been set aside for work on endocrine glands which is being carried out by Mr L R Broster, surgeon to the hospital

SPECIAL ARTICLES

ACTIVE IMMUNISATION AGAINST SCARLET FEVER

By W T Benson, M D, F R C P Edin
MEDICAL SUPERINTENDENT, CITY HOSPITAL AND LECTURER ON INFECTIOUS DISEASES, UNIVERSITY OF EDINBURGH AND

A L K Rankin, M D, D P H
LATE SENIOR ASSISTANT MEDICAL OFFICER TO THE HOSPITAL

This paper records the results of active immunisation of probationer nurses in the City Fever Hospital against scarlet fever over a period of nine years The value of this method of prophylaxis and incidentally of the reliability of the Dick test is demonstrated After a series of comparatively lean years the exceptional prevalence of scarlet fever in Edinburgh during 1933 afforded a severe test of the protective measures applied to the nursing staff

The ordinary commercial preparations of "Dick Toxin," "Dick Control" and Scarlet Fever Prophylactic A and C issued by Messrs Burroughs and Wellcome have been employed throughout this investigation It would now be advantageous to increase the toxin content of the commercial scarlet fever prophylactic from 2500 and 20,000 skin test doses per c cm to 5000 and 50,000 skin test doses per c cm respectively

RELIABILITY OF THE DICK TEST

We have noted the subsequent development of scarlet fever in 5 out of 1063 natural Dick negative reactors (including 417 probationer nurses) who had been intimately exposed to the disease On the other hand, 52 out of 303 Dick positive reactors have within our experience contracted scarlet fever, although less exposed to infection

The Dicks (1934) record complete freedom from scarlet fever in some 24 000 naturally Dick negative individuals, and, what is perhaps more striking, in 4000 Dick negative pupil nurses and interns on duty in contagious wards Complete freedom from scarlet fever in small groups of naturally Dick negative reactors is recorded by Hektoen and Johnson (1934) Faulds (1933) Nishibori (1932) Peacock Werner, and Colwell (1932), and Rhoads (1931) Our experience is more in accord with that of Jacobsohn, Jundell, and Lomberg (1929), Knights (1929), Sparrow (1928), and Toyada (1927), who have all observed the somewhat rare occurrence of scarlet fever in Dick negative reactors Toyada noted that 25 out of 6270 Dick negative reactors subsequently contracted scarlet fever

The possibilities of error in the application and reading of the test are such that occasional discrepancies are to be expected The anomalies of the Dick reaction have been carefully studied in the wards of this hospital by McGibbon (1931) He concluded that the test afforded for all practical purposes a reliable index of immunity to scarlet fever

DICK TEST RESULTS

The Dick test has been applied on entry to 645 probationer nurses, 228 (35 3 per cent) were Dick positive With an annual entry of 61 to 76 probationers, the Dick positive percentage in successive years from 1928 to 1933 was 46 26, 24, 35 43 and 51 This may be a chance variation arising from the small numbers involved yet the increasing proportion of susceptible entrants during the past three years may have some bearing on immunising problems which we dealt with this period

METHOD OF IMMUNISATION

Dick and Dick (1934) advise five subcutaneous immunising injections at weekly intervals, commencing with 500 skin test doses and increasing to a final injection of 80,000 to 100,000 skin-test doses of toxin—the Dick retest to be applied two weeks after the last dose They state that such a course will immunise successfully 95 per cent of susceptibles and lessen susceptibility in the remainder If the Dick retest be positive the final injection should be repeated Rhoads (1931) has immunised 298 nurses at the Cook County Hospital, Chicago, the protective course amounted to 115,500 skin test doses of toxin Two weeks after the final injection of 80,000 skin test doses 81 4 per cent of the nurses were Dick-negative

In Britain the immunising course generally employed has not so far exceeded 30,000 skin test doses of toxin, Frazer (1932), Faulds (1933), Stallybrass (1931) After experimenting with varying dosage, Benson (1928) found that the administration of a minimum course of 26,000 skin test doses of toxin in three or four injections rapidly gave rise to an effective immunity against scarlet fever This course was employed in the routine immunisation of probationer nurses in the City Hospital with considerable success By 1931 the immunity response had become so unsatisfactory that the course was increased to 36,000–52,000 skin test doses of toxin The primary immunising course employed at various stages of the investigation is detailed in Table I

TABLE I

Primary Immunising Course

Year	Size of Dick reaction	Day of administration					Total dose of scarlatinal toxin in multiples of skin test dose
		1st	8th	15th	22nd	29th	
1928–1930	mm < 25	1 000	—	5 000	—	20 000	26 000
	> 25	500	1,000	5 000	—	20,000	26 500
1931–1933	< 25	1,000	—	5 000	—	30,000	36 000
	> 25	500	2 000	5 000 or 10,000	—	30 000 or 40 000	37 500 or 52 500
1934	< 25	1,000	5 000	25 000	50 000	—	81,000
	> 25	500	2 000	5 000	25 000	50 000	82,500

The primary course now administered consists of four or five injections at weekly intervals amounting in all to some 80,000 skin test doses of toxin The retest is applied two weeks after the final injection and, if positive, another 50,000 skin test doses of toxin are injected A retest is again applied fourteen days later The attempt to immunise ceases when approximately 130 000 skin test doses of toxin have been administered The present course approximates to the 100,000 skin test doses of toxin stated by Park and Schroeder (1928) to be necessary for the production of a prolonged immunity

SYSTEMIC REACTIONS

The scarlet fever prophylactic up to 5000 skin test doses has been mixed with the diphtheria prophylactic immediately prior to injection Whilst this procedure invalidated the collection of accurate data the following details of reactions arising from prophylactic injections are of interest

Fourteen (10 per cent) out of a total of 143 completely immunised nurses suffered from well marked constitutional symptoms following one or other of the immunising injections. During six years (1928 to 1933) 25 nursing days were lost owing to reactions.

Five nurses were off duty (eight days in all) following injections of scarlet fever prophylactic; the responsible dose in four cases was 500, 1200, 50,000, and 60,000 skin-test doses of toxin respectively. In the fifth case a reaction followed the final injection of a preparation of experimental toxin (Parke, Davis and Co)

Six nurses suffered from more or less severe constitutional symptoms (12 days off duty in all) following the injection of 1 c cm. of diphtheria prophylactic (toxoid-antitoxin mixture) plus either 500, 1000, or 5000 skin-test doses of scarlatinal toxin Three nurses who received an injection of 1 c cm. diphtheria prophylactic (T.A M.) plus 1 c cm scarlatinal toxoid suffered from sharp reactions (five days off duty) It is not possible to assess the relative part played by each constituent

According to the Dicks (1934) some 10 per cent. of systemic reactions may be expected to follow one or other of the protective injections even if the immunising dosage is reasonably graded Rhoads (1931) records that the reactions arising from immunising injections against scarlet fever in 190 nurses resulted in 45 5 days' loss of duty It is to be noted, however, that the total dosage employed by Rhoads was approximately two to three times larger than ours Peacock, Werner, and Colwell (1932) met with severe reactions in 15 per cent of immunised members of a hospital staff

The following is a description of a severe reaction which followed a final injection of 50,000 skin-test doses of toxin administered to a house physician. He had received three prior injections of 500, 1000, and 5000 skin-test doses of toxin, the first and third of which caused mild systemic disturbance.

At 9 30 A.M. 50,000 skin-test doses of toxin were injected intramuscularly. About 12 midday he felt ill and vomited Between 12 midday and 3 P.M. he suffered from nausea and vomiting (12 vomits), choleraic diarrhœa, severe intestinal colic, and cramps in the calf muscles. The temperature rose, accompanied by two rigors, and pulse-rate was 140 per minute The face was flushed, the conjunctivæ injected, and a generalised scarlatiniform rash was present by 2 P.M. Fauces and palate were reddened, but no sore-throat He felt very prostrated. The following day he was much better, except for general soreness and loss of appetite Apart from lassitude, recovery was complete within 48 hours.

DEVELOPMENT OF IMMUNITY

A total of 212 nurses have been immunised against scarlet fever. The first two years' results have already been published, Benson (1928), but may perhaps be briefly recapitulated Whereas only 56 per cent of a group of 41 nurses who received a course of 10,000 to 16,000 skin-test doses of toxin became Dick-negative within two weeks of the final injection, 32 nurses who received 26,000 to 66,000 skin-test doses of toxin developed immunity within this period of time. The results obtained from 1928 onwards are summarised in Table II

The arresting feature in this Table is not only the diminishing response to the immunising course, particularly apparent in the last two years, but that this diminution should have occurred in spite of an increase in the immunising dosage We do not understand why this change has arisen The simplest explanation would be to postulate some variation in the test or immunising toxin It may be due to a lower basic immunity of the entrants as indicated not only by the steadily increasing percentage of Dick-positive reactors but also by an increase in brilliant reactors since 1931.

Particulars of the second and third immunising courses (one or two injections) administered to persistent Dick-positive reactors are appended in Table III.

TABLE II

Development of Immunity after Primary Immunising Course

Year	Number of nurses immunised.	Immunising course. 26,000 s t.d.	Immunising course. 36,000 to 46,000 s t d	Dick-negative within— 2 weeks of final inj.	Dick-negative within— 4 weeks of final inj	Dick positive 4 weeks after final inj
1928	28	28	0	20 (71 %)	27 (96 %)	1
1929	10*	10	0	7 (87 %)	7 (87 %)	1
1930	18	18	0	7 (40 %)	15 (83 %)	3
1931	16	1	15	6 (38 %)	12 (75 %)	4
1932	25	0	25	7 (28 %)	15 (56 %)	10
1933	34*	0	34	15 (47 %)	17 (53 %)	15

* Two nurses left hospital before retest. inj =injection

TABLE III

Development of Immunity after Second and Third Immunising Courses

Year	Dick-positive four weeks after primary course	Second immunising course	Dick-negative within—		Dick-positive at four weeks	Third immunising course	Dick-negative	Dick positive
			Two weeks of final inj	Four weeks of final inj			At four weeks	
1928	1	25,000	1	—	0	—	—	—
1929	1	30,000	1	—	0	—	—	—
1930	3	25–35,000	2	3	0	—	—	—
1931	4	30–40,000	1	3	1	60,000	—	1
1932	10*	36–40,000	6	6	—	—	—	—
1933	15*	30–60,000	8	8	3	60,000	3	—

Each immunising course is expressed in multiples of the skin test dose of toxin

* Four nurses left hospital before retest

From this Table it will be noted that 34 nurses required the primary immunising course of 26,000 to 46,000 skin-test doses supplemented by further doses of toxin. The total dose of toxin (primary plus supplementary course) administered to these nurses varied from 50,000–56,000 skin-test doses in 5 to 70,000–106,000 in 29 cases.

One nurse who received in all 103,500 skin-test doses of toxin was still Dick-positive (16 × 20 mm) at retest four weeks later There was no pseudo-reaction. Her original very brilliant Dick-reaction which measured 30 × 30 mm in diameter had, however, markedly diminished in size and intensity The attempt to immunise this nurse to Dick-negative was abandoned.

During 1929 four nurses (not included in Table II) were immunised with an experimental toxin kindly supplied by Messrs Parke, Davis and Co Three developed immunity within 14 days of completion of a course of five weekly subcutaneous injections; No one was still Dick-positive at four weeks No systemic reactions were noted.

DURATION OF IMMUNITY

Forty-six successfully immunised nurses, the majority of whom had received 36,000–80,000 skin-test doses of toxin, were retested two and a half years later, 44 were still immune, but 2 nurses who had been immunised with 26,500 and 30,500 skin-test doses of toxin respectively gave a positive Dick retest

Dick and Dick (1934) state that retests performed at varying intervals up to six years in successfully immunised individuals showed that only 5 to 9 per cent had reverted to a susceptible state The same authorities are of the opinion that the duration of active immunity depends on the amount of toxin injected Benson (1927) concluded that active immunity can be attained by the injection of relatively small doses of toxin, but that large doses are required for the production of a lasting immunity It is hoped that the important relationship between dosage and duration of immunity is fully appreciated by those administrators who may be contemplating the application of this prophylactic method to the general community

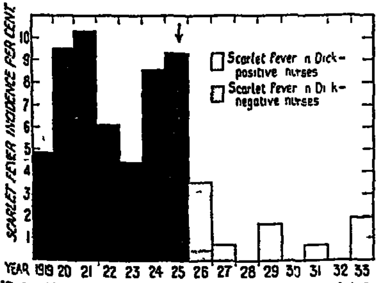

FIG 1.—Chart showing the annual incidence of scarlet fever among the nursing staff, 1919–1933 Active immunisation began in 1925 and after that year the columns are stippled or hatched according to whether the nurses who contracted the disease were Dick positive or Dick negative

INCIDENCE OF SCARLET FEVER

The annual incidence of scarlet fever and tonsillitis in the probationer nursing staff since 1919 is shown in Table IV.

TABLE IV

Incidence of Scarlet Fever and Tonsillitis among the Nursing Staff

Year	Average weekly probationer staff	Scarlet fever in staff and incidence per cent	Tonsillitis in staff and incidence per cent	Number of true scarlet fever patients admitted.
1919	145	7 (4·8)	27 (18·6)	1437
1920	148	14 (9·5)	22 (15·0)	1374
1921	146	15 (10·3)	32 (21·9)	1983
1922	147	9 (6·1)	44 (30·0)	1480
1923	137	6 (4·4)	28 (20·4)	1711
1924	129	11 (8·5)	35 (27·1)	1601
1925	161	15 (9·3)	36 (22·3)	1906
1926	151	5 (3·3)	27 (17·8)	1502
1927	148	1 (0·7)	18 (12·7)	1578
1928	128	0 (0·0)	14 (11·0)	823
1929	123	2 (1·6)	35 (28·0)	938
1930	135	0 (0·0)	14 (10·4)	1058
1931	148	1 (0·7)	23 (15·5)	504
1932	162	0 (0·0)	25 (15·0)	961
1933	155	3 (1·9)	35 (22·6)	3401

Active immunisation commenced in October 1925 During 1926 the method was still in an experimental stage during 1934 there has not been a case of scarlet fever

Whilst active immunisation was commenced in October 1925 the results obtained in the year 1926 will be omitted as the method was then in an experimental stage Seventy-seven nurses contracted scarlet fever during the seven pre-immunisation years 1919 to 1925 inclusive Seven nurses contracted scarlet fever during the seven post-immunisation years 1927 to 1933 inclusive—a reduction of 91 per cent in the incidence of the disease

Particulars of the seven nurses who developed scarlet fever during the seven years 1927–1933 are appended

CASE 1—Year 1927 A strongly Dick positive nurse who developed scarlet fever on her third day in hospital, two days after the application of the test

CASE 2—Year 1929 Contracted scarlet fever within one week of entering hospital and prior to the application of the Dick test

CASE 3—Year 1929 Dick test on entering hospital on March 16th, 1929, doubtful negative Developed typical scarlet fever on May 12th, 1929 Dick test repeated second day of disease gave a faint but definite positive reaction

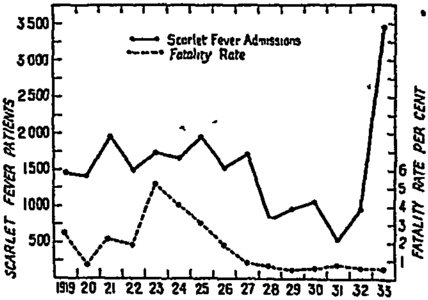

FIG 2.—Chart showing (1) the annual number of scarlet fever patients admitted to the hospital, and (2) the fatality rate among them

CASE 4—Year 1931 Dick positive on entry on Oct 10th, 1930 Immunised 30,500 skin test doses of toxin Dick negative Dec 10th, 1930 Developed typical mild scarlet fever Jan 27th, 1931—Schultz Charlton blanching No hæmolytic streptococci obtained from single throat culture (human blood agar plates) Patient's own serum withdrawn during fourth week convalescence did not produce blanching in typical scarlet fever rash in 0·5 c.cm dose Control with 0·2 c cm commercial scarlet fever antitoxin diluted 1 in 10 gave typical blanching Two Dick tests applied on the second day of disease, test performed on forearm negative, test performed on upper arm *faint but definite positive*

CASE 5.—Year 1933 Dick positive on entry July 17th, 1933 Developed scarlet fever August 9th, 1933, during immunisation

CASE 6—Year 1933 Developed scarlet fever within fourteen days of entering hospital Dick test had not been applied

CASE 7—Year 1933 Dick positive on admission to hospital on Dec 16th, 1930 Immunised 26,500 skin test doses of toxin Dick negative March 16th, 1931 Developed an exceedingly mild attack of scarlet fever (Schultz Charlton blanching &c) two and a half years later (Oct 10th, 1933) No temperature when she reported sick on third day owing to faint rash Dick test on Oct 12th 1933, faint but definite positive Apparently slight loss of immunity after two and a half years

Summarising these seven cases we note the development of scarlet fever in (a) two nurses prior to Dick testing, (b) two Dick positive nurses prior to or during immunisation, (c) two nurses erroneously regarded as Dick negative, and in (d) one nurse who had apparently after two and a half years partially lost her artificially produced immunity

The diminished incidence of scarlet fever following immunisation is strikingly apparent in Fig 1 A careful study of Fig 2 along with Fig 1 justifies the conclusion that the diminished incidence of scarlet fever is a direct result of immunisation

The Dicks (1934) record that no case of scarlet fever has occurred among 12,584 immunised individuals in institutions where scarlet fever was epidemic. Of 3000 susceptible nurses and interns immunised before commencing duties in contagious hospitals not one subsequently contracted scarlet fever, whereas 37 cases of the disease occurred among non-immunised members of the hospital staffs.

Smythe and Nesbit (1928) give details of the active immunisation of over 3500 children in Indiana resulting in a materially lessened incidence of scarlet fever among the immunised Toyada and co-workers (1930) employing an immunising dosage of 25,000 to 40,000 skin-test doses of toxin found that the rate of infection in immunised individuals was 1 per *1000* as compared with 43 3 per *1000* in a control group Favourable results following immunisation with toxin have also been published by Knights (1929), Radoyé (1930), and Mersol (1929). In Britain successful results in the institutional control of scarlet fever by active immunisation of susceptible individuals with scarlatinal toxin have been recently recorded by Stallybrass (1931), Macgregor (1931), Edgar (1932), and Faulds (1933).

INCIDENCE OF TONSILLITIS

From a study of the appropriate column in Table IV. the virtual disappearance of clinical scarlet fever from the nursing staff following immunisation does not appear to have been compensated by an increase of tonsillar infections This corroborates the findings of Benson (1928) and Faulds (1933), and is opposed to the experience of Kinloch (1927) On bacteriological as well as on clinical grounds 25 of the 35 cases of tonsillitis recorded during the year 1933 were considered to be due to infection with the hæmolytic streptococcus. Four of these infections, occurring as they did in Dick-positive reactors, may presumably be ruled out as masked scarlatinal infections The remaining 21 cases were distributed as follows. 13 in naturally Dick-negative nurses and 8 (38 per cent) in successfully immunised originally Dick-positive reactors As the proportion of susceptible entrants during the years *1931 to 1933* who were subsequently immunised amounted to 42 per cent of the total entrants, the distribution of hæmolytic streptococcal faucial infections suggests that the artificially immunised nurse is no more liable to suffer from a "scarlatinal tonsillitis" than her naturally immune neighbour.

Table V shows the scarlet fever plus tonsillitis incidence in the nursing staff during the three years of maximum prevalence of scarlet fever in the general community

TABLE V

Incidence of Scarlet Fever plus Tonsillitis in Nursing Staff

Immunity of staff.	Year.	True scarlet fever cases admitted to hosp	Nursing staff (weekly av)	Scarlet fever	Tonsillitis	Scarlet fever plus tonsillitis
				Cases in nursing staff		
Not immunised	1921 1925	1983 1906	146 161	15 15	32 36	47 (32 3%) 51 (31 6%)
Immunised	1933	3461	155	3	35	38 (24 5%)

For the seven pre-immunisation years, 1919–1925, the combined incidence of scarlet fever and tonsillitis in the nursing staff *amounted to 301* cases, an average of 43 each year. For the seven post-immunisation years, 1927–1933, the corresponding figures were 171 and 24 respectively.

DOES AN IMMUNISED STAFF INCREASE THE RISK OF CONVEYANCE OF INFECTION TO NON-SCARLATINAL PATIENTS ?

In an immunised nursing staff recognisable scarlet fever may be replaced by a highly infective localised faucial infection or by the carrier state Dick-negative nurses suffering from a tonsillo-pharyngeal infection suspected to be due to the specific (?) hæmolytic streptococcus have invariably been returned to duty in scarlatinal wards

The number of diphtheria patients under ten years of age who have contracted scarlet fever in hospital during each of the past fourteen years has been ascertained (Table VI) Cases that developed scarlet fever within the first five days of residence have been excluded.

TABLE VI

Incidence of Scarlet Fever in Diphtheria Patients under Ten Years of Age

Year	Diphtheria patients	Diphtheria patients who contracted scarlet fever and percentage	Total true scarlet fever admissions
1920	617	23 (3 7)	1374
1921	546	17 (3 1)	1983
1922	419	12 (2 9)	1560
1923	436	16 (3 7)	1741
1924	449	12 (2 7)	1604
1925	545	25 (4 6)	1906
1926	374	19 (5 0)	1502
1927	442	4 (0 9)	1578
1928	389	4 (1 0)	823
1929	838	12 (1 4)	938
1930	750	16 (2 1)	1058
1931	588	13 (2 2)	564
1932	406	8 (2 0)	961
1933	347	9 (2 6)	3461

During the latter half of the year 1933 the hospital was inundated with scarlet fever to an extent never previously known, yet only 5 out of each 200 diphtheria patients under ten years of age contracted the infection whilst in hospital, an incidence of scarlet fever cross-infection actually less than that of any of the pre-immunisation years One could not imagine more favourable conditions for the conveyance of infection by an immunised staff

SCARLATINAL TOXOID

We are indebted to Dr R A O'Brien for a preparation of scarlatinal toxoid (formalinised toxin), the potency of the toxin of origin was approximately 250,000 skin-test doses per cubic centimetre The primary immunising course consisted of three injections each of 1 c cm at weekly intervals This course was administered to eight nurses (cases not included in Table II)

In five nurses no systemic disturbance followed the injections Three nurses who received a combined injection of scarlatinal toxoid plus 1 c cm diphtheria toxoid-antitoxin mixture developed sharp reactions Three nurses gave a Dick-negative reaction fourteen days after completion of the primary course of 3 c cm, whilst five were still strongly Dick-positive To these five a further 1 c cm. was administered. The second retest four weeks later was Dick-negative in one and still definite Dick-positive in four Another course of 3 c cm toxoid was administered to the four remaining susceptible nurses. Three developed immunity within fourteen days of the final injection One (tested at fourteen-day intervals) did not give a Dick-negative reaction until the sixth week

Whilst toxoid may solve the reaction-producing problem presented by toxin it has still to be proved an efficient *immunising* agent.

Cantacuzène (1933) employed formol toxoid in Rumania The course consisted of three injections The incidence of scarlet fever in one group of 1158 "completely" immunised children was 1·8 per cent as compared with 1 6 per cent in a control group of 2365 non-immunised children, in another group of 1229 "completely" immunised children in 1291 0 97 per cent as compared with 1 8 per cent in the non-immunised controls The author condemned the Dick test and active immunisation as a method of control ing scarlet fever We should like to know what is implied by "completely" immunised

Debré and Ramon (1931) give their experience with anatoxin in various children's institutions in Paris After vaccination with anatoxin, 65 per cent of Dick positive children became Dick negative, but many lost their immunity within a few months [Probably indicates inadequate dosage of antigen] These observers found it difficult to assess the degree of protection conferred by anatoxin On the other hand the results obtained by Olariu (1931) with scarlatinal toxoid (formalinised toxin) were favourable Ando and Ozaki (1930) are of the opinion that completely detoxicated scarlatinal toxoid has lost its antigenic power so far as human immunisation is concerned Futagi (1930) working with a preparation of toxoid produced 81 5 per cent immunity in a group of susceptible individuals as compared with 99 3 per cent when ordinary toxin was employed This markedly antigenic preparation of toxoid still produced undesirable reactions Moriwaki (1929) did not get good results with various toxoided modifications of streptococcal toxin

Apparently scarlatinal toxin tends to loose its antigenicity when "toxoided"

GABRITCHEWSKY'S VACCINE

Gabritchewsky's vaccine has of recent years been again extensively employed as an immunising agent against scarlet fever in certain continental countries This vaccine essentially consists of a mixture of killed streptococci plus streptococcal toxin

Mstibowsky (1930) records the results of vaccination of some 20,000 children with this preparation The incidence of scarlet fever in the vaccinated group was 41 cases as against 113 cases in 10,340 controls Korschun and Spirina (1929) state that 61,820 children have been actively immunised against scarlet fever in Moscow since 1925 Either vaccine, toxin, toxoid, or a combination of these preparations was employed They consider the method of value in diminishing the morbidity from scarlet fever and more particularly in lessening the case mortality of the disease Hoffmann (1934) also speaks favourably of this vaccine preparation and describes Schottmüller's method of combating an epidemic by combined passive and active immunisation

According to Sparrow (1928) 61 cases of scarlet fever (0·37 per cent) occurred among 16,315 actively immunised children from 7 to 14 years of age as compared with 1158 cases (1 29 per cent) among 89,818 non immunised children of the same age group

Zlatogoroff (1930), from the inoculation of 11 709 children in Kharkov, concluded that vaccination had a favourable, if short lived, effect on the morbidity and mortality of scarlet fever

CONCLUSIONS

The Dick test is for all practical purposes a reliable index of immunity to scarlet fever

Active immunisation with graded doses of toxin will rapidly and effectively protect the majority of susceptible persons against scarlet fever To obtain a lasting immunity at least 80,000 to 100,000 skin test doses of toxin must be administered in five weekly subcutaneous injections of 500, 2000 5000, 25 000, and 50,000 skin test doses Even with this graded course of injections systemic reactions must be expected in at least 10 per cent of individuals immunised

Scarlet fever and diphtheria prophylactics may be safely administered as a combined injection

The nursing staffs of fever and children's hospitals should be actively immunised against scarlet fever There is no evidence that clinical scarlet fever has been replaced by "scarlatinal tonsillitis" in successfully immunised nurses and an immunised nursing staff does not increase the risk of conveyance of scarlet fever to non-scarlatinal patients

Active immunisation is the most effective method of controlling scarlet fever in residential institutions for children.

Should active immunisation be offered to the public it is essential that an adequate immunising dosage be employed, otherwise the method will get into disrepute

The possibilities of this method of prophylaxis should be brought to the notice of the general practitioner Active immunisation of "home contacts" would help to solve the "return case" problem

So long as the present mild phase of scarlet fever persists a method of control entailing not only five injections, but also the probability of systemic reactions, is not practicable for general application in Great Britain

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GENERAL MEDICAL COUNCIL

WINTER SESSION, NOV 27TH–30TH, 1934

APART from disciplinary cases there was little business to claim the Council's attention

On behalf of the *Pharmacopœia Committee* Sir Henry Dale reported that the monographs on crude drugs chemicals, and pharmaceutical preparations for the proposed addendum to the B P were almost complete The Pharmacopœia Commission had reviewed the newer remedies and selected those suitable for inclusion and was now occupied with the preparation of monographs on biological products and preparations of vitamins in agreement with international standards The principle he said, was being maintained of excluding from the Pharmacopœia the names of protected substances

On behalf of the *Public Health Committee* Sir Henry Brackenbury proposed the addition to the resolutions and rules for public health diplomas of a note stating that the requirements both as to curriculum and examinations represented only the minimum It was agreed to add a note to the following effect .—

The observance of these rules does not prevent any licensing body granting the degree or diploma, or any institution approved by such body, from requiring a larger number of hours than those specified to be spent in the study of prescribed subjects, or requiring instruction to have been given in subjects additional to those prescribed Indeed, the use in Rules 8 and 9 of the word "include" implies that knowledge of other subjects may possibly be tested as part of the examination The duties of local government authorities and their medical officers are constantly being extended by the legislature, and modern scientific research is making available in several new directions knowledge of the greatest importance to medical officers of health and to other medical officers engaged in public health work These factors emphasise the value to medical officers of a knowledge of such subjects as hospital provision, equipment, and administration, of mental disorder and deficiency, and of genetics—all in their relationship to public health; and these subjects may well become part of the curriculum of public health instruction

On behalf of the *Curriculum Committee* Dr H. L. Tidy said that it was not yet in a position to give any full report They had asked the licensing bodies to tell them of any changes recently introduced into their requirements for the curriculum and to give expression to any wishes for action by the Council. These replies were now being studied

At a meeting of the *Executive Committee* preceding the Council meeting the following names, erased under Section 14 of the Medical Act, 1858, were restored to the Medical Register .—

Beaumont, William H
Chrystal, Francis M (S)
Goldberg, Harry R (S)
Grant, David R
Griffiths, Evan H
Hefferman, John T. (S)
Henderson, Randolph R (Col)
Johnson James MacG
Kearns, Joseph M (I)
Kelly, John (I)
Lapidus, Hyman E
Lovegrove, Frederick T A
MacConaill, Michael A (I).
McLean, James Y (S)
Nenon, Eleyldath K K
Miller, Duncan
Nichol, Robert W
Norman, Doris B
Oakley (Mrs), Mary A
O'Connor, Roderick (I)
Paterson, William L (S)
Plunkett, Bernard (I)
Scally, Clara L M (I).
Stuart, Christina (S)
Sumner, Theodotus J (S)
Walsh, Joseph C (I)
Ward, Hubert Walter (S)

MEDICINE AND THE LAW

Industrial Reactions to Efficiency

IN Davies and others *v* Richard Johnson and Nephew Ltd and another four Manchester workmen tried in vain to establish a legal right of action against their employers and a firm of "efficiency experts" whose "observers" stood over the workmen with a stop-watch and timed and noted their every action The experts were introducing a system of "human power measurement" with a view to advising the employers as to increased output and decreased cost of production The men, who worked by piecework, objected to this close supervision The presence of scrutineers at their elbows threw them out of their stride. One of the workmen told Mr Justice Luxmoore that the effect of the observation was to produce a cold sweat accompanied by loss of appetite for several days Another said he was haunted in dreams at night by the observer A third said that the observation produced a "wiggly-woggly" feeling so intense that his hands trembled and he could not do his job properly It was suggested that materials were wasted and output (and consequently earnings) reduced by reason of the supervision The four plaintiffs asked for a declaration that it was an implied term of their contracts of employment that the defendants should do nothing to hinder the course of their work. The judge dismissed the claim on two grounds. He thought the men (who had not struck him as displaying any nervous tendency in the witness-box) had grossly exaggerated the physical and mental effect of the experts' observation upon them. And he thought they could not put the implied condition so high as to cover what had occurred There must also be, he said, an implied condition in a contract of employment that the employer is entitled to see, whether by himself or by an agent, that his workmen are doing their job efficiently, and to observe the workmen's work with a view to suggesting possible improvements, or to substituting other work, or to making savings in the conduct of the work The judge decided that there had been no breach of contract by the employer and that there was no evidence on which he could hold that the "efficiency experts" had procured any breach Trade-union representatives had protested to the employers that this system of observation would lower output and earnings and would cause profound irritation among the men The judge, of course, excluded political considerations

IRELAND

(FROM OUR OWN CORRESPONDENT)

BICENTENARY AND AMALGAMATION OF A HOSPITAL

IN July, 1734, the first patients were admitted to Mercer's Hospital, and last week the event was celebrated in Dublin On Dec 4th, a reception was given by the governors at the hospital, with the Archbishop of Dublin, an ex-officio governor, presiding. Among those present was the Minister for Local Government and Public Health Addresses on different aspects of the history of the institution were given by Dr T. P C Kirkpatrick, Mr R Keatinge, and Sir John Lumsden, and an address on its future by Dr R J Rowlette Dr Kirkpatrick pointed out that while Mercer's Hospital was 200 years old, its site had been that of a hospital from the thirteenth century to well on in the seventeenth. Mercer's was the third in order of seniority of the Dublin voluntary hospitals, the two elder being Jervis-street and Dr Steevens'. He gave many interesting particulars of the difficulties encountered and surmounted by the governors of Mercer's Hospital during the first century of its existence, and of the attempts made to establish it as a teaching centre in connexion with the School of Physic in Trinity College The first public performance of "The Messiah" of Handel was given in aid of Mercer's Hospital, and much of its income during the eighteenth century was got from charity sermons and musical performances. So important were the sermons in aid of the hospital in the eyes of Dublin society at the time that the Courts adjourned to permit of Bench and Bar attending the services Mr Keatinge added details from the early minute books throwing light on domestic conditions Sir John Lumsden told of the work done in the past 40 years to raise the hospital to a high level of efficiency, and paid a special tribute to his former colleague—Richard Charles Butler Maunsell, surgeon to the hospital for over 30 years Dr. Rowlette made a statement as to the hopes of the governors and medical staff to bring about an amalgamation of the hospital with two other institutions of similar scope—Sir Patrick Dun's Hospital and the Royal City of Dublin Hospital. He pointed out that a hospital unit of 100–150 beds could not hope to do its work as efficiently as a larger unit, and stated that the governors had been forced to the opinion that better service for the public and better opportunities for education and research would be obtained by the merging of these three hospitals into one The proposal had been warmly encouraged by the Hospitals Commission, and a joint committee was busy working out the details of a scheme

On the evening of Dec 5th the matron entertained a company of some 300 nurses and guests to a dance in the hospital, and on the next day a dinner of past and present students and members of the staff was held at the Royal Hibernian Hotel when a company of over 200 sat down under the chairmanship of Sir John Lumsden, senior member of the staff

THE APPOINTMENTS COMMISSION

Since the selection of candidates for appointments under local authorities was committed some eight years ago to a local appointments commission, the working of that body has been closely watched, and its value is now recognised in almost every quarter Medical candidates are particularly pleased that nowadays they can look with confidence to a fair consideration of their claims and a fair recommendation as a result The President of the Executive Council, Mr de Valera, who admitted that he had been at one time prejudiced against the work of the Commission, declared in the Dáil a few months ago that he was quite satisfied that it performed its duties efficiently and fairly In 1928 a Select Committee of the two Houses of the Legislature was set up to study the working of the Commission It made a report containing several recommendations of importance, none of which have up to the present been acted upon

UNITED STATES OF AMERICA

(FROM AN OCCASIONAL CORRESPONDENT)

A PHYSICIAN'S FANTASY

WHEN President Roosevelt, speaking in Washington on Nov 15th, expressed doubt as to whether the time had come for any federal legislation on old age security, he added "Organisations promoting fantastic schemes have aroused hopes which cannot possibly be fulfilled" His words will generally be understood to refer to the proposal of a California physician, Dr F E Townsend This doctor, retired from service as public health officer in Long Beach, conceived the idea of using old age pensions as a complete cure for depression and economic ills in general He would give to every person over 60 years old in the United States $200 a month on the single condition that the money must all be spent within 30 days. This enormous expenditure would prove such a tonic to industry that everyone would find employment and prosperity would return The huge sums necessary to make these payments are to be raised by a sales tax

It is not astonishing that Dr Townsend failed to interest the 1933 Congress in this project What is remarkable is the success that he met when he appealed for popular support One meets his ardent disciples in the most remote places men and especially women, to whom the Townsend plan has become a veritable religion Dr Townsend himself conducts an office in Washington that employs 500 people, to that extent, at least, he has contributed to re employment Some 4,000,000 individuals have signed petitions favouring a trial of his plan

In the same speech that foretold the postponement of old age pensions Mr Roosevelt referred to health insurance as due "soon or later" Whether or not a health insurance bill will be introduced in the next Congress, plenty of work on the coming American plan is being done behind the scenes by the President's committee on economic security The *Journal of the American Medical Association* announces that the presidents of the American Medical Association, the American College of Physicians, and the American College of Surgeons have accepted positions on a medical advisory board Popular interest in the subject will be maintained by a series of 19 radio addresses under the general title Doctors, Dollars, and Disease, which are sponsored by the National Advisory Council on Radio in Education and will be broadcast over a nation wide hook up weekly from Nov 19th to Feb 25th (10 45 P M , E S T)

FALLING DEATH RATES

The Bureau of the Census announces a record low death rate for the year 1933 There were 1,342,073 deaths from all causes which, on the estimated population for 1933, gives a death rate of 10 7 per 1000 This is also the first time that mortality statistics are complete for the whole country, the State of Texas having been admitted last year Deaths from contagious diseases showed a decrease, due chiefly to decreased mortality from influenza and from tuberculosis Maternal mortality also declined Cancer deaths remained practically the same as for 1932 Mortality from this cause had increased steadily for 15 years prior to 1933

The mortality experience of the Metropolitan Life Insurance Company for the first nine months of 1934 indicates that the tuberculosis death rate has continued its remarkable decline, though the general death rate may be slightly higher than last year An unusual feature of this experience is the appearance of divergent trends for pneumonia and influenza, the former having increased while the latter has again decreased Suicides and homicides have each decreased, but there has been a sharp rise (9 6 per cent) in the fatalities from automobile accidents

Panel and Contract Practice

Mortgaging of Practices

AT the November meeting of the Insurance Acts Committee the question was raised as to the prevalence of this practice in various areas Many instances have occurred in Lancashire and in the London area Birmingham it seems, has had only one case of a practice changing hands with a mortgage on it although of course there, as elsewhere, practices have been bought with borrowed money It might be argued that a doctor who owes money for his practice on which he has to pay interest would be more likely to give way to lax certification, canvassing, and other doubtful practices with the idea of attracting patients and paying off his loan the more quickly, or equally plausibly that under such financial control he would behave as a salaried assistant and be less liable to ethical transgression Certain it is that financial organisations are increasingly approaching doctors, especially those with big lists with offers of attractive terms if they will sell their practices Newly qualified men are being circularised with the information that it is quite easy to buy a practice if a particular firm is allowed to advance the money. There is still good reason for initiating the newly qualified medical man or woman in business methods, or for putting him in touch with those competent to advise. But help is now so readily obtainable that the man who decides to take such an important step without advice has only himself to blame if he finds himself in difficulties On the other hand the firm wh offers (say) three years' purchase for a practice a then sells it to a novice may find its capital valu rapidly diminishing quantity. A scheme is in course construction by representatives of the British Medic Bureau and the Medical Insurance Agency whereb reasonable cover being afforded, the whole of t purchase money may be provided under terms n onerous enough to embarrass the purchaser commercialise the practice.

PUBLIC HEALTH

The Nation's Health in 1933

THE Registrar-General's Statistical Review of England and Wales for the year 1933[1] records a total of very nearly half a million deaths (496,465), of which, taking broad groups, 27 per cent. were debited to diseases of the circulatory system, 14 per cent. to infectious and parasitic diseases, 13 per cent. to cancer and other tumours, 11 per cent. to diseases of the respiratory system, 8 per cent. to diseases of the nervous system and sense organs, 5 per cent. each to diseases of the digestive system and to violence, 7 per cent. to causes peculiar to the extremes of life (premature birth, congenital debility, &c, and senile decay), and 10 per cent. to the remaining causes. Calculation of rates of mortality from this mass of material reveals no very striking changes in the nation's bill of health The standardised death-rate at all ages was 0 1 per 1000 higher than in the previous year, the mortality of males showing no change, that of females rising by 0 1, while the rate for all persons was 0 5 per 1000 below that of the quinquennium 1926–30. The infant mortality-rate at 64 deaths per 1000 live births was one below the rate of 1932 and four below the rate of 1926–30, and this in spite of a hot, dry summer. The death-rate from diarrhœa and enteritis did reveal a slight rise—at ages under two years it was 6 98 per 1000 live births compared with an average rate of 6 22 for the previous three years—but no movement is to be observed comparable with that of such years as 1911.

Of the diseases of childhood measles showed a peculiarly low level in 1933, less than half the rate of the decade 1921–30, and for a figure equally low one has to go back as far as 1921. The epidemic of cerebro-spinal fever, that reached its mortality peak in 1931, continued to decline slowly, but the rate of 67 per 1,000,000 living at ages under 15 years was still nearly double that of the quinquennium 1926–30 Tuberculosis (all forms) touched another low record with a standardised rate of 799 per 1,000,000, nearly 10 per cent below the level of the previous five years. Respiratory tuberculosis showed a very slight rise over the figure of 1932, but was also appreciably below the average rate of recent years When changes in the age constitution of the population are allowed for, the total mortality from cancer is found to have changed inappreciably over the last nine years, the standardised rate fluctuating round 1000 per 1,000,000. The mortality from puerperal causes, expressed per 1000 total live- and still-births, which had shown a slightly improved figure in 1931 and 1932, rose again in 1933 to 4 32, 7 per cent above the level registered in 1932 A division of the constituents results in an increase of 13 per cent. from 1932 to 1933 in puerperal sepsis and 3 per cent in other puerperal causes Deaths from prematu birth and injury at birth, it may be noted, are bo at a slightly higher level than in the last few yea Stillbirths per 1000 total births show no change recent years

Deaths from violence illustrate the customa sex differences Deaths of males from suicide a more than double the deaths of females—the ra for the former shows a small decline, for the latt a small rise. In 111 murders the females outnumb the males in the proportion of 3 to 1 (only 9 executio took place during the year), and the same ratio recorded for accidental burns. From scalds, on t other hand, and accidental injuries by falls, crus ing, &c, deaths of males are approximately doub those of females, while accidental drowning accoun for seven times as many males as females

The birth-rate in 1933 fell to the lowest point y recorded (14 4 per 1000 total population), whic taken in conjunction with the death-rate, gives rate of natural increase of population of 2 1 per 1000

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[1] New Annual Series, No 13 Tables. Part I., Medical H M. Stationery Office. 6s.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDE DEC. 1ST, 1934

Notifications.—The following cases of infectio disease were notified during the week Small-pox, (scarlet fever, 3701; diphtheria, 1752; enteric feve 22; acute pneumonia (primary or influenzal), 107 *puerperal fever*, 40; *puerperal pyrexia*, 140; cerebr spinal fever, 17; acute poliomyelitis, 10; acu polio-encephalitis, 1; encephalitis lethargica, continued fever, 1 (Paddington); dysentery, 2 ophthalmia neonatorum, 75. No case of choler plague or typhus fever was notified during the wee

The number of cases in the Infectious Hospitals of the Lond County Council on Dec 10th–11th, was as follows Small po 0 under treatment, 2 under observation, scarlet fever, 18 diphtheria, 2165, measles, 188, whooping-cough, 218, puerper fever, 19 mothers (plus 9 babies), encephalitis lethargica, 26 poliomyelitis, 9; "other diseases," 286 At St Margaret Hospital there were 18 babies (plus 8 mothers) with ophthalm neonatorum.

Deaths.—In 121 great towns, including Londo there was no death from small-pox, 2 (1) from ente fever, 1(0) from measles, 8 (2) from scarlet feve 13 (2) from whooping-cough, 57 (10) from diphther 33 (9) from diarrhœa and enteritis under two years, an 64 (10) from influenza. The figures in parenthe are those for London itself.

Bradford reported the only death from enteric fever outsi London There were 5 deaths from diphtheria at Liverpo 2 each at Harrow, West Ham, Luton, Burnley, Hudderfiel Hull, Manchester, Middlesbrough, and Birmingham Death attributed to influenza occurred in 35 great towns, Sheffield an Sunderland each reporting 4, Liverpool, Newcastle upon Tyn Salford, and Birmingham, each 3.

The number of stillbirths notified during the wee was 249 (corresponding to a rate of 40 per 1000 tot births), including 41 in London.

CENTENARY OF A GLASGOW HOSPITAL.—The Roya Maternity Hospital, Glasgow, is celebrating its cen tenary In the past few years the hospital has dea annually with about 9000 cases, and about 7000 childre are born alive each year in the institution.

CORRESPONDENCE

SEVERE GASTRIC AND DUODENAL HÆMORRHAGE

To the Editor of THE LANCET

SIR,—Statistics of gastro duodenal hæmorrhage, based on series of considerable size, which have appeared in recent years have all shown a serious mortality-rate In the annotation in your last issue, accompanying Hellier's careful analysis, you rightly refer to the note of dissatisfaction common to the various authors This is a change from the somewhat complacent attitude of ten years ago, before the publication of Bulmer's and subsequent series But I think that the problem can be narrowed down to comparatively small limits Three of the progressive steps may be given as follows

Hurst in 1924 gave the mortality from hæmatemesis as 2 6 per cent Bulmer in 1927 found that the mortality of cases admitted as hæmatemesis between 1902 and 1926 and eventually diagnosed as peptic ulcers was approximately 10 per cent This was evidence of an unexpectedly high death rate from hæmatemesis For the period 1926–31 his figures re 16 per cent Chiesman in 1932 found a mortality f 27 per cent in 101 cases of severe hæmatemesis nd gross melæna following peptic ulcers, and of 4 per cent if hæmorrhage was occurring 24 hours later fter admission to hospital)

At first sight it would appear that mortality is ncreasing or varying greatly in different localities ctually none of these three series is comparable with he others, the rising figures being due undoubtedly to stricter selection of the cases included It may be aken that in these series a group of cases is progressively being separated, amongst which a high roportion of the deaths from hæmorrhage occur

Aitken carried the process a step further by ividing his cases into two grades of severity His rading is somewhat, though probably not greatly, ffected by all the fatal cases being placed ipso facto n the group of severer hæmatemesis, some of the eaths probably being influenced by other factors. But he clearly separated profuse bleeding into two rades, one grade having a low mortality and the other rade a mortality of one in three, whether treated medically or surgically The series of Chiesman and Aitken thus agree closely and place a serious aspect on profuse hæmatemesis or melæna

The recently published figures of T A Lloyd Davies and R W Nevin (Brit Med Jour, Nov 10th, 1934, p 858) support and emphasise these conclusions To cases already classified as exhibiting evidence of profuse bleeding they apply a criterion on which they divide them further into severe or moderate according to their condition on admission to hospital In the severe group the mortality is 45 per cent and in the moderate group 6 per cent The criterion for the severe group (in cases in which the blood was examined) was below 20 per cent hæmoglobin Possibly a better figure is 30 per cent This would further ncrease the mortality in the severe group and reduce t in the moderate group On the other hand, they classify the cases according to the condition on admission when exact diagnosis is not always possible, and thus their figures as Bulmer points out (Brit Med Jour, Nov 17th, p 920), are not strictly comparable with those for peptic ulcers alone The general deductions, however are not affected by these factors rom the studies by Chiesman, Aitken, and Lloyd Davies and Nevin it is now clear that there is a definite group of severe hæmatemesis and melæna with a very high mortality They die and they die quickly A further hæmorrhage within 24 hours is almost a death warrant The group is not difficult to recognise clinically, although a satisfactory definition is not easy As Aitken says, "It is nearly always possible to say whether a given case is grave or not" Apart from this group, the mortality of hæmatemesis and melæna (although the bleeding may have been considerable) falls at once to a fraction of the other figure. It is the treatment of this group which needs careful and renewed consideration

The existence of a group so sharply separated was not clearly recognised in the past Thus in 1924 a discussion took place at the Royal Society of Medicine on the treatment of severe gastric and duodenal hæmorrhage At that time the medical treatment of peptic ulcers was just coming to the front but was not generally followed, and surgery was still the predominant mode of treatment, except for acute ulcers Possibly the conflict between these two methods was a prominent question in the speakers' minds. Hæmatemesis also was considered as a whole with the low mortality which it was held to involve Many of the pronouncements of the speakers at that meeting are out of date when this serious group with its rapid progress is borne in mind The following may be quoted —

> The danger of death from the bleeding is not great Few patients die from the first hæmorrhage
>
> If the hæmorrhage is from an acute ulcer, the hope of a complete recovery through medical treatment is very good
>
> There should be no such thing as the surgical treatment of acute hæmatemesis
>
> Operation should not be advised while bleeding is persisting, but should be advised not later than 48 hours after it has stopped

Where these statements refer to *facts*, they cannot be accepted, where they refer to opinions they need to be reconsidered One *may note*, for example, that few of us would be prepared to state, on first observation of the patient, that an ulcer was acute and *not chronic*

In 1934 the Royal Society of Medicine held a discussion on hæmatemesis Dr Abrahams, who opened it, called special attention to the exsanguinated patient He emphasised the improvement in blood transfusion as compared with 1924. With regard to operation, surgery, he said, must be a direct attack on the bleeding point Other speakers agreed with these statements, but, apart from this, there was little difference from the discussion in 1924

We have to consider the question whether the treatment can be improved in this severe group apart from the treatment of hæmorrhage and ulcers as a whole. We know little as to the relation of the fatal cases to a long or short history of previous symptoms, nor as to their relation to acute and chronic ulceration—not always the same question—and possibly to other factors of age and sex

It will probably be accepted that blood transfusion and even repeated blood transfusion is generally desirable, for we need not now fear the supposed risk of a rise of blood pressure. The question of medical versus surgical treatment cannot be decided on available statistics There is no doubt that the mortality *from operation* in these recent *series* has been very high, but in view of the present general tendency to treat ulcers medically these results may largely represent desperate efforts to save hopeless cases So far as I know there is no record of a series of consecutive cases of this type which has been operated upon. No surgeon and indeed no physician is anxious to be solely responsible for them. Yet it would appear that at present, or until we have further knowledge, the decision as to operation should be made at the moment the diagnosis of grave hæmorrhage is decided upon It is a serious delay for the physician and surgeon to agree to wait and see what happens, as we all do so often As Aitken says, "There is no means of predicting with any accuracy which grave cases will die," nor which cases will continue to bleed Perhaps we may learn to do so. Unfortunately, these cases are not invariably due to hæmorrhage from large arteries, the condition most favourable to operation

As to medical treatment, the mortality under modern methods is fairly clear The question is whether or not the methods can be improved We must not accept too readily that blood transfusion, even repeated and with large quantities, is the simple solution, though we may accept it as a routine procedure Bulmer has expressed doubts as to wisdom of the present use of morphia; and it may be that the stomach can be over-immobilised in these circumstances. Hurst long ago advised washing the stomach with ice-cold water, but personally I have never had the courage to try.

The position is that a group of cases exists which can be easily recognised. Many die and die quickly. We cannot tell at present which will die and which will recover, and the mortality is so high that we cannot regard it with complacency.

I am, Sir, yours faithfully,

Devonshire-place, W., Dec. 7th. H. LETHEBY TIDY.

LONDON UNIVERSITY AND ITS MEDICAL SCHOOLS

To the Editor of THE LANCET

SIR,—The letter of Sir E. Graham-Little in THE LANCET of Nov. 24th raises a point of great interest and importance to medical students and teachers in the University of London It is, as he points out, a deplorable fact that only a relatively small percentage (56 in 1932, 59 in 1933) of the students of medicine of the University who have passed the second M B. (anatomy, physiology, biochemistry, and pharmacology) ultimately take the M B , B S. degrees because, as he rightly points out, they are often unable on account of economic stress to stay the course.

Now, it is probably true to say that practically every medical student of the University, though intending to proceed ultimately to the degree, first takes the qualification of the Conjoint Board (M.R C S., L R C P) which he can do at a somewhat earlier period than he can sit for the degree This enables him to register and to go out and earn some money as an assistant or perhaps in a practice of his own In almost every instance he intends to keep up his reading and come back in a year or so and take the third or final M B , B S But here comes the difficulty The final examination comprises pathology, bacteriology, forensic medicine and public health, medicine, surgery, and midwifery. Though this can be passed in two groups one of the groups is composed of surgery and midwifery (B S), the other of medicine, pathology, bacteriology, and forensic medicine including public health and hygiene (M B.), and failure in one subject of a group means failure in a group. There would be comparatively little difficulty in keeping up the three clinical subjects, and even improving his knowledge of them, for he is in touch with them in the course of his daily work It is, however, utterly different in regard to pathology and forensic medicine. These are academic subjects with little relation to his daily experience in general practice and if he is to keep up to examination standard he must do it by a pure "grind" Even that may be impossible, for there is no access to actual pathological material and specimens Is it any wonder that many give up the struggle and never return to face the final M B , B S !

The remedy is, to my mind, simple Let a third professional examination be instituted comprising pathology, bacteriology, forensic medicine and public health, and make it possible for this to be taken, say at the end of the fourth year and before it is possible to sit for the final examination of the Conjoint Board He would then, no doubt, take the Conjoint examination as usual, but having already passed in pathology and forensic medicine would have little difficulty, even though he had gone into general practice, in getting up his three clinical subjects to the degree standard. At least the attempt would not be the hopeless struggle that it so often is at the present time

I am, Sir, yours faithfully,

F. J. BROWNE.

Obstetrical Unit, University College Hospital Medical School, Huntley-street, W C , Dec 6th.

To the Editor of THE LANCET

SIR,—In your issue of Nov 24th Sir Ernest Graham Little commented on the very small proportion of students studying for a London University degree who actually proceed to that degree I should like, if I may, to express a student's view-point There are of course several factors in the situation—e g., finance, the quality of the student, the training at the medical school, the examination itself In your leading article of Dec 1st (p. 1230) you show that the financial advantage lies with the student who takes the M B., B S for 12 guineas rather than the Conjoint qualification for 40 guineas—the usual alternative As for the London student, the fact that the majority of degree candidates achieve success up to and including the second M B. shows that there is nothing wrong with his intellectual standard. Again, the medical schools prove their fitness by their success in getting the very large majority of their students through a qualifying examination.

There remains the examination itself, and by this I mean the final examination. Let us first carefully analyse this examination and see what can be learned from it It is intended to be a "qualifying" examination—i e , one to which a candidate should proceed on completing a three years' studentship subsequent to second M B , and one which he should have a reasonable chance of passing after this training That it is not so regarded is common knowledge amongst London medical students; with very few exceptions they would not dream of taking it at the end of their student career What they do is to take some other qualification and then proceed to hold house appointments at their own and other hospitals. Eventually after having acquired greater experience they take London degree finals—and even then a considerable number fail to pass Coming up in May on completing my student appointments at a provincial medical school to take the examination as an external candidate, I found that I was competing with men who had held important house posts for as much as two years after qualifying elsewhere All the candidates of whom I inquired said they were already qualified

Even the examiners must believe most candidates to be qualified, for I was asked by one in a viva voce if I was in general practice The entry form has in fact a space on it for "any registrable qualification with date" It would therefore seem that the London final examination is different from that of other universities in that it is *not* the examination by which the candidate seeks to get his first qualification In the provincial universities most students do qualify via their own M B, and it is mainly those who fail who seek a qualification elsewhere to avoid waiting six months before entering for their own degree again The pass percentage is certainly much higher at other universities than London, the candidates are definitely recognised as students and are examined as such Candidates come up for these examinations at the end of their student clinical studies To do this full course as I did and then to be "ploughed" in the four important subjects is an "achievement," as one member of my family put it This result could have been gained without any course of study, let alone after conscientiously doing a three year course

How then can this be remedied? I submit three suggestions:—

1 Conduct the examination as a real "qualifying" examination, recognising that it marks the end of a student course and one to which the candidate can proceed confidently after this course is completed The final M B is not, and never ought to be, a post graduate qualification and I am sure the General Medical Council do not look upon it as such

2 To divide the examination into two parts, allowing pathology, forensic medicine, and hygiene to be taken at the end of the fifth year As the examination now stands, it is an ordeal lasting nearly a month—too big a strain on any candidate

3 Render the course more attractive by adopting Sir Ernest's excellent suggestion of granting a degree after three years, as is the case in any faculty other than medicine

Finally I would suggest that external students should be made known as such to examiners, thereby recognising that they may have and express views differing from those held in London As there is a remote possibility that I may again appear before them I prefer to withhold my name and sign myself

Sir,
Yours faithfully,

Dec 3rd   A REGISTERED STUDENT

SERUM PROPHYLAXIS AND PUERPERAL SEPSIS

To the Editor of THE LANCET

SIR,—May I, an amateur in matters of immunology, express my congratulation to Dr Pulvertaft on his proposal to regard the pregnant woman as a potential septicæmic and to treat her accordingly? In an article which you have accepted for publication I have set out a series of cases of joint tuberculosis treated at this sanatorium, showing the fall in the incidence of secondary infection of tuberculous joints following the introduction of Dick toxin immunisation of patients on admission This series of cases is suggestive but not conclusive of the value of Dick-toxin immunisation in this respect An alteration in the method of treating some forms of tuberculous disease may have contributed to the fall in the rate of secondary infection I would unhesitatingly say, however, that Dick toxin immunisation is worthy of further investigation as a means of preventing acute streptococcal infections in tuberculous joints I can therefore sympathise with Dr Pulvertaft in his advocacy of similar means with a view to reducing the incidence of puerperal septicæmia

I am, Sir, yours faithfully,

M C WILKINSON,
Medical Superintendent Essex County Council
Sanatorium, Braintree

Dec. 8th

To the Editor of THE LANCET

SIR,—Dr Pulvertaft deplores the fact that parturient women are not protected against the risk of puerperal sepsis by an injection of antitoxic (streptococcal) serum Does he suppose that no one has considered the merits and demerits of such a procedure hitherto? He appears to base his own assurance as to its efficacy on the experiments of Parish and Okell[1] which showed that rabbits could be protected, for six days at any rate, by an injection of antitoxic serum given several hours before an enormous inoculation of an avirulent streptococcal culture into the blood stream It may be noted that these experimental conditions differ profoundly from those which obtain in the woman whose lacerated tissues are freshly infected by a virulent streptococcus, and, further, it is a matter for regret that the effectiveness of the rabbit protection was judged on survival of the animals *for six days only* Before they were killed on the sixth day these "protected" rabbits "almost always" developed a suppurative arthritis (and sometimes pericarditis) from which hæmolytic streptococci could be cultivated, so that the *serum* can hardly be credited with having prevented infection of the tissues These experiments then give us, at best, a rather doubtful basis for prophylaxis in man, and even those who reported them have been careful not to assert that the serum in man will "certainly do good," as Dr Pulvertaft claims I would submit that this doubtful basis has been so much weakened as to be almost negligible by all that has been learned since 1928, of which Dr Pulvertaft tells us nothing We have learned—

(*a*) That immunisation of human beings [illegible] of fever hospitals) with Dick toxin, although it apparently prevents the subsequent development of scarlatiniform rashes, gives no protection against infection by the hæmolytic streptococcus [illegible] &c)—a fact which would seem to sweep away the hypothetical foundation on which [illegible] antitoxic serum is built

(*b*) That the injection of antitoxic and "antistreptococcal" sera sometimes [illegible] ment of the incipient *streptococcal* [illegible] it is intended to prevent. [illegible] infected large numbers of [illegible] with hæmolytic streptococci from [illegible] acute human infections ([illegible]) and at the same time [illegible] with antitoxic and "anti[illegible]" brands of British, American [illegible] facture) Very few of the [illegible] trace of protection at all [illegible] them showed [illegible] administration of [illegible] animals

(*c*) That an [illegible] "immune") into [illegible] that serum [illegible] very seriously with the ability of that animal to deal with an infection by hæmolytic streptococci (Burn, Chandler, and Hartshorn[3])

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[1] Parish, H J, and [illegible]

(*d*) That there is very grave reason to suspect that antitoxic and "antistreptococcal" sera in man may not "prevent further damage," as Dr Pulvertaft so confidently asserts, but may actually promote such damage. Our experience at Queen Charlotte's Hospital with over 40 serum-treated cases, all of whom were infected by hæmolytic streptococci, points very strongly in that direction. True, this evidence (which I hope to publish in full within the next few weeks) deals with therapeutic results rather than prophylaxis, but have we any reason for believing that an agent which apparently is capable of harmful effects during the early stages of an established infection will have a directly opposite effect at the very beginning of such an infection ? I think not—and the mouse experiments of Penfold and Butler would seem to support my contention.

The above—and other evidence which cannot well be dealt with in a short letter—leads me, Sir, to the conclusion that there is at present no substantial ground whatever for believing that antitoxic serum will protect any woman against infection by a virulent streptococcus On the other hand, it is certain that a panic policy of wholesale prophylaxis would cause many women to suffer the miseries of serum sickness quite unnecessarily, would involve a great expenditure of public money, and might well increase rather than decrease the risk of puerperal sepsis. Most of our work in these laboratories is directed to the finding of an effective prophylactic or "checking" agent, but I will frankly admit that it is not yet in sight

I am, Sir, yours faithfully,

LEONARD COLEBROOK.

Queen Charlotte's Maternity Hospital, Bernhard Baron Memorial Research Laboratories, Hammersmith, W , Dec 10th

UNQUALIFIED RADIOLOGY

To the Editor of THE LANCET

SIR,—As a hospital administrative officer of 40 years' standing and a student of radiology since the days when Rontgen's discovery left its cradle in the laboratory and was accepted as an ancillary branch of medical practice, my attention was attracted to the letter under this heading in your issue of Dec. 1st over the signatures of Mr G Shearer and Dr. J Duncan White of the British Institute of Radiology. The early workers in the field of radiological research, perhaps with greater forcefulness than any others, can offer Mr Shearer and Dr. White whole-hearted support in their aim to limit the practice of medical radiology to those who are equipped with adequate knowledge and experience They witnessed the disasters of uninformed practice which have no parallel to-day notwithstanding the continued existence of isolated irregularities A brief review of the history of radiology will throw some light upon the cause of the irregularities and may indicate the way in which ultimately they will be eradicated

The news of Rontgen's discovery spread rapidly, as also did the significance of its value in the diagnosis of physical abnormalities and later in the treatment of disease, but a knowledge of the physical and therapeutic properties of the new radiation was much more slowly disseminated from the centres of learning ; thus it happened that enthusiasm too often exceeded ability and an aftermath of suffering followed. The new-born child was the victim of disease soon after its birth. That radiology survived as an ancillary branch of medicine is due to the courage and devotion of distinguished physicists, physicians, engineers, and men whose only qualification was a knowledge of physics Their example attracted to their ranks a gradually increasing number of workers, often men who sought no reward other than the pleasure of service Step by step, the personnel of the X ray departments, if such they could be called, established in the cellars of many hospitals, was improved, and the work which in many instances had been relegated to mechanics, and often to porters under medical supervision of a nominal character. came under the care of skilled operators working in coördination with the clinicians Under these conditions increasingly good work was done, resulting in increasing demands for services This coördinated service had a mutual educational value, and the reason why the older members of the medical profession continue to recognise the lay workers' service is obvious

The rapid evolution of radiology, especially of diagnostic radiology, has in recent years attracted to its service an increasing number of medical men willing to devote their time exclusively to the study and practice of the science That there is ample scope for this no one can deny, for there is an immense field for study and research The educational process, so slow in its beginnings, has become progressively more rapid The services of the specialist in radiology are appreciated to so great an extent that the demand for services cannot invariably be supplied. Medical practitioners isolated in districts remote from hospital centres cannot always secure readily the expert aid they need. The medico-legal aspect of practice in its association with radiology is a source of constant anxiety, and if the medical practitioner, faced only with this difficulty, can secure the apparatus necessary or the service of someone possessing the apparatus .to make such minor examinations as fractured bones require, a very good purpose is served. The practice cannot be advocated as a counsel of perfection and it is not likely to survive when facilities for expert examinations are adequate

A perspective view of all the events shows that the sickly child is becoming strong and healthy There are few diseases which do not carry with them their own antitoxins Educational propaganda must eventually be more effective than legislation That there will be further developments seems highly probable, for regional work which combines medicine, surgery, and endoscopy with radiology is slowly gaining popularity.

I am, Sir, yours faithfully,

HAROLD WIGG,

Secretary to the Hampstead General Hospital,
and Officer in Charge of X Ray Department,
Royal Buckinghamshire Hospital, Aylesbury

Belsize-lane, Hampstead, N.W., Dec. 5th

A PUBLIC ASSISTANCE PANEL

To the Editor of THE LANCET

SIR,—On page 1304 of your last issue there is a note on the decision of the public assistance committee of Warrington to inaugurate a panel in the place of the district medical service, if the approval of the Ministry of Health can be obtained We in this county have had to contend with a similar situation The Hampshire public assistance committee also desired to organise a panel system to take the place of salaried district medical officers There was strenuous opposition to these proposals The district medical officers organised themselves to defend their position, they received the support of the medical advisory committee and of general medical opinion in the county, and as a result the project has been shelved for two years We cannot, however, look upon this as more than a temporary respite unless we can meanwhile get into touch with such medical opinion elsewhere in the country as is also opposed to the new proposals The undersigned, who is chairman of the committee of Hampshire district medical officers, would welcome communications from practitioners in other counties holding similar views

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[3] Burn, C., Chandler, C , and Hartshorn, M · Jour. Exp Med., 1934, lx , 1

I am, Sir, yours faithfully,

J A Balck Foote

White Lodge, Andover, Dec 8th

INSULIN HYPOGLYCÆMIA

To the Editor of The Lancet

Sir,—Dr Cooke's interesting article in your last sue (p 1274) includes a valuable table showing the lative frequency of the well known symptoms of sulin hypoglycæmia in addition to recording two ew ones He states that "In spite of the variety of nanifestations the initial symptom in any one ubject is nearly always the same in successive ttacks" But there are many exceptions to this, for nstance, one patient of mine who has taken insulin for me years has had the following symptom complexes n different occasions —

(1) Weakness and malaise associated with lack of precision in thought	Many times
(2) Sweating, tremor, palpitation of the heart	6 or 7 times
(3) Difficulty in writing or speaking, followed by drowsiness	About 3 times
(4) Double vision	3 times
(5) Sudden unconsciousness	Once

I believe that these different manifestations correspond to different levels of the blood sugar or to different degrees of fall, but proof has not yet been obtained

Dr Cooke suggests that if a patient were taught his wn symptoms by a deliberate overdose and then arried glucose tablets about with him the inconveniences and possible dangers of hypoglycæmia would e practically non existent" But again there is a ifficulty, even if the patient recognises the symptoms e is often in a state of perversity, negativism, or ecklessness, comparable to conditions produced by lcohol, his judgment and his sense of danger are in abeyance and although he carries sugar with him he will not take it, and refuses it when it is offered I have seen this on several occasions in persons who are otherwise careful and steady

I am, Sir, yours faithfully,

G M Wauchope

Brunswick place Hove Dec 10th

To the Editor of The Lancet

Sir,—Dr Cooke has given a good description of the best method of treatment for a severe attack of hypoglycæmia, in which the patient is unable to swallow a sugar solution It does not take long in a hospital to prepare a sterile solution of glucose for intravenous injection but this is very difficult in the home and some patients unfortunately have severe attacks of hypoglycæmia after leaving hospital in spite of careful instruction in the signs of overdose Dr Cooke says that "the subcutaneous injection of adrenaline has little to recommend it, as its effectiveness depends on the presence of an adequate store of glycogen in the liver—a condition liable to be lacking in the diabetic" Although it is probable that the store of glycogen in the liver is low, there may be enough to raise the blood-sugar sufficiently to enable the patient to swallow sugar by mouth I have seen patients in hospital recover consciousness after an injection of 1 c cm of adrenaline, but I now recommend the giving of 1 c cm of pituitrin which has the effect of raising the blood sugar and does not seem to be so dependent on the presence of glycogen in the liver The pituitrin should be given by the nurse or patient's relatives as soon as possible The patient should be given a drink containing 1 oz of sugar (6 lumps of cane sugar) as soon as he can swallow, in order to prevent a return of the hypoglycæmia

Dr Cooke says that the "rectal administration of glucose is uncertain on account of difficulties of retention and slowness of absorption " This is doubtless true, but it is worth while trying its effect, and it can be given by the patient's nurse or relatives while the pituitrin is taking effect—pending the arrival of the doctor, which may take a considerable time If the patient is still unconscious in spite of this treatment the doctor should give 2 oz of glucose in 10 oz of water by a stomach tube, and repeat the injection of 1 c cm of pituitrin The preparation of sterile glucose solution and the arrangements for the intravenous injection can then be proceeded with, but it is unlikely that this will be necessary as the patient will probably have recovered long before they can be prepared in a private house The morning and evening dose of insulin should each be reduced by 10 units after a severe attack of hypoglycæmia

It is fortunate that severe attacks of hypoglycæmia only occur very occasionally as they are very alarming for the relatives Provided the attacks are treated with pituitrin and sugar either by rectum or by mouth, or by an intravenous injection, it is certain that the patient will recover, unless he has been unconscious for a long time before treatment is started

I am, Sir, yours faithfully,

Harley street, W , Dec 10th George Graham

ULCERATION FOLLOWING GASTRO-JEJUNOSTOMY

To the Editor of The Lancet

Sir,—I owe Prof Pannett an apology I read his book, "Gastro duodenal Ulceration" shortly after its publication in 1926, but I am afraid I was so much interested in its more controversial contents that I overlooked his references to recurrent duodenal ulceration following gastrojejunostomy Lord Moynihan has kindly sent me details of similar cases which have come under his care He tells me that the first case in his own practice led him to the conclusion that the ulcer must be dealt with directly—i e, by cautery excision and temporary closure of the pylorus by purse string or infolding suture on the proximal side In this way he has eliminated persistence or recurrence of duodenal ulceration

Prof Pannett takes me to task in that I do not represent the facts quite fairly when I say that German surgeons have adopted gastrectomy in preference to gastrojejunostomy He would like me to substitute for gastrectomy the term duodeno gastrectomy I have no objection to this but I really believed and still do, that the beneficial and essential part of this operation as applied to duodenal ulcer is concerned with the stomach and not with the duodenum The German surgeons, as I pointed out in my letter, have been influenced in their procedures by the frequency with which duodenal ulceration was complicated by gastric ulceration. No such frequency is seen here or in America and I do not see why patients in this country should be subjected to gastrectomy (or duodeno-gastrectomy) for duodenal ulcer because their fellow-sufferers abroad have got more refractory stomachs I am not forgetting that fear of gastrojejunal ulceration has also influenced German surgeons in their decision against gastrojejunostomy In the type of stomach with which they have to deal, gastrojejunal ulceration is naturally more prone to occur; and to avoid this complication it is doubtful if partial resection of the duodenum and pyloric part of the stomach is sufficient. In this connexion, Prof. Pannett quotes the name of Finsterer I had the pleasure, some years ago, of watching Prof. Finsterer at work (in Vienna) and also of assisting him with a few of his cases It struck me at the time that the partial gastrectomy for duodenal ulcer which he performed was no half-hearted measure, but a fairly generous ablation of stomach tissue—more than half the organ being removed And why? Because gastrojejunal ulcer is not unknown after pylorectomy; in fact gastrojejunal ulcer has occurred after much larger parts of the stomach have been resected But I am sure that many surgeons agree with C H Mayo when he said "If any man wanted to cut out half of my good stomach in order to cure a little ulcer of my duodenum, I would run faster than he"

The duodenal part of the operation of duodeno-gastrectomy is somewhat of a puzzle, to me at any rate. Ulcer of the posterior surface of the duodenum is not uncommon and its proximity to bile-ducts or the hepatic artery may make the operation dangerous or impossible. In such cases Finsterer performs partial gastrectomy proximal to the pylorus, and according to Hurst his results have been no less satisfactory than those in which duodenectomy had been carried out. Why then carry out the duodenectomy? Perforation or hæmorrhage? These can be eliminated without the bigger operation. One must not withhold from Prof. Pannett admiration and congratulation on the excellent results he has obtained with duodeno-gastrectomy; his mortality is lower than that of continental surgeons, with the possible exception of Prof Finsterer. At the same time Walton has estimated that the mortality-rate of partial gastrectomy for duodenal ulcer is 6 per cent. whereas that of gastrojejunostomy is 2 per cent This means that the mortality for this operation alone is greater than that for gastrojejunostomy plus gastrectomy for recurrent ulceration (when required) And this is the mortality in skilful and experienced hands: what are going to be the results if surgeons who have not Prof. Pannett's skill, or continued opportunities for performing this operation, decide to adopt it? It seems a pity that he should urge us to abandon the comparatively safe operation of gastrojejunostomy—particularly when such brilliant results have been obtained by Lord Moynihan and Walton and other leading surgeons in England. The type of operation performed by these surgeons eliminates the danger of recurrence of ulceration in the duodenum, and the incidence of gastrojejunal ulcer in their series is admittedly small.

I am, Sir, yours faithfully,

Wimpole-street, W., Dec 11th. MICHAEL J. SMYTH.

KNOWLEDGE OF GOOD AND EVIL

To the Editor of THE LANCET

SIR,—In your review of the "Encyclopædia of Sexual Knowledge" (THE LANCET, Nov. 10th, p. 1053), you appear to deplore "extensive quotations . . . from books the sale of which has hitherto been confined to members of the legal and medical professions" I am not clear as to whether the book is made unsuitable by technical passages which the public will not be able to understand, or whether you fear that they may learn more than is good for them I am interested because, while I have often seen cases in which ignorance of sexual matters has contributed to a patient's misfortune, I cannot recollect ever to have been consulted by one who was suffering from too much knowledge.

I am, Sir, yours faithfully,

Santa Fe, New Mexico, Nov. 27th. J. ROSSLYN EARP.

ELECTRICAL SLAUGHTER AND ANÆSTHESIA

To the Editor of THE LANCET

SIR,—In a lecture briefly reported on p. 1321 of your last issue Sir Leonard Hill recommends electrical methods of slaughtering animals and speaks of the anæsthetic effect of the electric current I would like to suggest that the tests of consciousness used in chloroform anæsthesia cannot safely be assumed to be valid in the case of an animal or person who has been immobilised as a result of an electric stimulation of the brain The matter is of great importance because, as a result of the Slaughter of Animals Act, electric immobilisation is being extensively employed in the slaughter-house as an alleged anæsthetic; and its use for operations, both veterinary and experimental, has been proposed The question, nevertheless, is still unsettled, and until there has been further investigation statements should not be made which imply that electrolethalling has been proved to cause genuine anæsthesia Objective data on the subject are extremely restricted in their scope, but the following facts appear to be definitely established—

(1) It is possible to produce, by passing a suitable electric current through the brain, a "nightmare" state in which the subject retains his senses but appears to an external observer to be completely unconscious, the pupil reflex being absent. The conditions under which this state can be produced have not been satisfactorily delimited, but they seem to approach those employed in the slaughter-house. The requisite range of conditions, whatever it may be, is one which sometimes although very rarely occurs in electrical accidents

(2) A weak interrupted direct current produces the same objective phenomena as sinusoidal (electrolethaller) current 20 times stronger as read with an ammeter Thus it is found that to get the desired objective effects on pigs in the slaughter-house the sinusoidal electrolethaller current must lie roughly between ½ ampere and 1 ampere, while Regensburger gets similar results with 10 per cent interrupted direct current of from 31 to 53 milliamperes,

(3) Controlled experiments on human beings have not been carried quite up to the point where the subject fails to recover his mobility immediately on the cessation of the current. In slaughter-house practice the current strength lies just above this point, and it must have done so in the case of those rare electrical accidents in which the nightmare state persists after the accident

(4) Leduc submitted himself to interrupted direct current up to 4 milliamperes, but failed to reach unconsciousness, although his assistants supposed him to be completely unconscious for 20 minutes. He felt sure, however, that if the current had been raised a very little higher unconsciousness would have ensued. Dr J. Hertz, at the Rothschild Hospital in Paris, therefore repeated the experiment with currents up to 25 milliamperes (or 18 milliamperes where the "on" period was 10 per cent) but

Leduc's prediction was not fulfilled The subjects failed to pass beyond the nightmare state They exhibited permanent dilation of pupils and were unable to respond to stimuli, but they retained their sensibility

(5) Breathing was sometimes inhibited during the nightmare state in Hertz's subjects, and in some victims of electrical accidents Zimmern in particular refers to an accident in which the victim knew that he could not breathe voluntarily and dreaded that artificial respiration might be abandoned prematurely

(6) The muscles in Hertz's subjects were sometimes contracted and sometimes relaxed The absence of squealing in electrolethalled pigs is not therefore necessarily due either to muscular contraction or to unconsciousness It may, for all we know, be due simply to the nightmare state

I intend to publish before long a more detailed statement of the above points, the purpose of the present letter is to urge that there should be no attempt to discourage inquiry into an unsettled question

I am, Sir, yours faithfully,
C W HUME

Finchley, N, Dec 8th

THE KETOGENIC DIET IN INFECTIONS OF THE URINARY TRACT

To the Editor of THE LANCET

SIR,—I have been greatly interested in Dr C M Vilson's article in your last issue, on Prognosis in nfection of the Urinary Tract by the Colon Bacillus, ecause I have been following his technique for two ears with considerable success.

May I therefore comment on two points? The first s that though in his 100 cases the diet was successful n 88, it is to be noted that of the 12 failures 8 were men Now, he treated 32 men, so that 25 per cent were failures. Similarly of the relapses amongst his successful cases during the last year 35 per cent occurred in men. These significant figures suggest that women are much more likely to be curable than men, a suggestion strengthened by the known fact that the pyelitis of pregnancy tends to spontaneous cure The explanation I offer for this difference in the sexes is that the urinary tract of women is much less complicated The trouble with men is residual foci in the prostate, vesicles, and epididymes, and unless these are treated relapse is almost bound to occur

We are greatly indebted to the physicians for putting into our hands a weapon such as the ketogenic diet It has rescued many of us from a pessimism almost of despair in the treatment of chronic colon-bacillus infection But its limitations ought to be understood, and I think it will greatly diminish the failures and relapses, and the consequent despair of male patients, if adequate surgical attention is paid to the comparatively accessible foci which are often present in the genital tract in the male

I am, Sir, yours faithfully,
J JOHNSTON ABRAHAM

Queen Anne-street W, Dec 11th

ALLEGED IMPROPER PROFIT

To the Editor of THE LANCET

SIR,—I was amazed to read in your last issue, under this heading, the case before the General Medical Council of an unfortunate doctor who had charged his patient a little more for spectacles than the cost What worries me is the fear that I may be sent for by the G M C for committing the same crime in selling for 2*s* 6*d* upwards a bottle of medicine which in many cases only costs a penny or twopence If the G M C has nothing better to do than investigate a case of this sort it is about time it were re formed

I am, Sir, yours faithfully,
Gillingham, Dorset Dec 10th P G FOULKES

PROFIT ON MEDICINES

To the Editor of THE LANCET

SIR,—The county council of Sutherland have recently requested the parish medical officers under them, who in the outlying districts supply and charge for medicines, &c, to paupers, in future to give prescriptions of these medicines to be collected by the clerk to poor assistance authorities and forwarded to the Glasgow bureau in order to have prices checked on National Insurance tariff I desire to know if it is legally competent for the county council to do so, seeing the various medical officers render accounts for the medicines supplied to paupers at ordinary retail prices, plus containers and postages

I am, Sir, yours faithfully,
Dec. 10th NEW ECONOMY

OBITUARY

ELEANOR DAVIES-COLLEY, M D Lond, F R C S Eng

We regret to announce the death of Dr Eleanor Davies Colley, senior surgeon to the South London Hospital for Women, whose death occurred in Harley-street, London, on Dec 10th

Eleanor Davies Colley was born in 1874 the daughter of Mr J N C Davies Colley, the distinguished surgeon who was for many years on the staff of Guy's Hospital, while her mother was the daughter of the late Mr Thomas Turner, treasurer of that institution She received her medical education at the London School of Medicine for Women obtaining the necessary clinical practice at the Royal Free Hospital She was throughout a brilliant student She graduated M B, B S Lond in 1907, proceeded to the M D degree in 1910, and in 1911 was the first woman to secure the diploma of F R C S Eng, sitting for the examination without having previously taken the membership After serving as house surgeon at the New Hospital for Women in Euston road, she became demonstrator in anatomy at the London School of Medicine for Women and subsequently surgical registrar at the Royal Free Hospital She was elected to the surgical staffs of the South London Hospital for Women and the Elizabeth Garrett Anderson Hospital and at the time of her death was the senior surgical member of the staff at each institution She had been suffering from thyroid toxæmia and died in her sleep

Miss Chadburn writes "My first recollection of Miss Davies Colley dates back to her student days As a student she came to my out patient clinic at the Elizabeth Garrett Anderson Hospital I well remember often wondering what she was thinking about as she sat beside me quietly observant somewhat critical Evidently a fine person, with medical tradition behind her and full of promise for the future rather older more experienced, and more generally cultured than most of the students I instinctively felt an admiration for her and I remember her hoping that she did not think my teaching poor stuff Next I remember her as my house surgeon one of the best, if not the best I ever had, sympathetic, kindly understanding with the patients interesting to work with, absolutely honest and reliable, a good diagnostician, an able assistant, and last, but perhaps not least, very good to look at, an inspiring, gracious, gentle, and strong personality with a smile that lit up her face in a wonderful way, and a sense of humour that positively made one happy to be with her. So she struck me then—25 years ago I little thought at that time that I was to have 24 years of intimate friendship with her, and such joy and belief in another human being as rarely falls to the lot of man or woman in this world

"About a year later she came to live with me at 16, Harley-street, and together we worked out the founding of the South London Hospital for Women; she shared with me all the excitement and satisfaction that success in that venture produced. She was one of the original surgeons to this hospital, at her death the only original member of the honorary staff left, her period of service has lasted (until her death last Monday, Dec 10th) in all over 22 years She helped greatly in establishing the surgery and the surgical reputation of the South London Hospital She worked also for some years as senior obstetrician at the Elizabeth Garrett Anderson Hospital, and also for some years as surgeon to the Marie Curie Hospital; she was a member of the Cancer Research Committee of that hospital, and working on the staff of this latter hospital at the time of her death.

"Miss Davies-Colley was intensely sensitive and highly strung; she felt the war deeply, but though sympathetic with all loyal effort made then, and essentially a brave person anxious to fulfil any demand upon her, her opinion was that medical women were most wanted for medical work at home She at no time contemplated Army service, but she did much free work for the wives and officers and men at the front Perhaps only those of us who were privileged to know her well could realise her rare spirit, her fine personality, her integrity of purpose She was impatient of all bombast, self-importance, and self-seeking to such a degree that she found it difficult to push her way to the position she attained Her transparent honesty occasionally caused a faux pas which gave her pain. She disliked social functions of all sorts, but to meet others in real friendship was a great pleasure to her House surgeons, colleagues, nurses, her family and her friends found inspiration in contact with her gracious and gentle personality, and felt it an honour to work with her. Those who knew her intimately turned naturally to her for opinions and advice Patients both in private and in hospital practice trusted and even adored her. As a surgeon she fulfilled the promise of her training, while in addition to skill and intelligence no trouble was too great to ensure the result desired—it was good to see her at work, and she used to say herself that the needlework part of surgery was no difficulty to her, certainly her cleverness with the household needle stood her in good stead with the surgical needle

"Her sudden unexpected death has caused profound gloom to fall over both her hospitals I fear my contribution is only an unworthy appreciation of a rare spirit, a delightful human being, a level-headed, honest worker, with admiration and with love her memory will be cherished by all who knew her"

ALEXANDER ARTHUR MACKEITH, M.B. Glasg.

Dr. Alexander MacKeith, whose death on Wednesday, Dec. 5th, followed a long illness, was a well-known member of the medical profession in Southampton and the neighbourhood Born in Glasgow in 1866, he came of a family of doctors He received his medical education at the University of Glasgow and his clinical training at the Western Infirmary, and graduated as M B., C.M in 1887. He then practised for some years in the West of England, in Exeter and in Ilfracombe, before settling five-and thirty years ago in Southampton. While at Ilfracombe he wrote some notes upon the place as a health resort and began his long association with ambulance work and the volunteer medical service, but his public services date from his residence in Southampton In 1905 he put his views upon provident medical service before the profession in a paper contributed to the *British Medical Journal*, and these took concrete shape in the Southampton public medical service and the hospital contributory scheme in Southampton, for both of which organisations he was largely responsible, while of the latter he remained vice-chairman until his death He was also chairman of the committee of management of the Free Eye Hospital, Southampton, for a long period, and remained on the committee after having passed the chair He was an active member of the B M A, being at different times representative of the Southampton division and president of the southern branch

Dr MacKeith was a surgeon-major in the 1st Hants R G.A (T), and during the war was medical officer to the prisoner of war camps. He was responsible for a local medical war emergency committee which arranged for carrying on the practices of doctors who were away on active service, and the excellence of his management of this delicate work was recognised at the termination of the war by the presentation to him of an illuminated address and a silver salver, subscribed for by his fellow practitioners

The following tribute reaches us from the hon secretary of the Southampton division of the British Medical Association. "A man of logical mind with a keen insight and the power to take the long view, MacKeith was a good and just negotiator—a man whose integrity was his most outstanding virtue coupled with cautiousness and gentle-mindedness round which all other manly virtues fitly clustered—a friend and counsellor, whose loss is deeply felt by his patients, his colleagues, and his fellow citizens"

Dr MacKeith leaves a widow and a large family Four of his sons have entered the medical profession.

ROBERT FLETCHER MOORSHEAD, M.B. Durh, F.R.C.S. Eng.

Dr. Moorshead who died on Dec. 4th of double pneumonia after a week's illness had spent his life in the service of the Baptist Missionary Society. Born at Bristol in 1874 he was educated at the medical school there and at St Bartholomew's Hospital, qualifying M B, B S Durham in 1898 and taking the Conjoint diplomas in the following year Four years later he went on to take his F R C S Eng He had no doubt about his career In 1902 with Dr. Percy Lush and Sir Alfred Pearce Gould he helped to found the Baptist medical mission auxiliary and was himself largely responsible for creating the interest and support that has now given the Baptist community 16 hospitals with 900 beds in India, China, and Africa. During this time Dr Moorshead was fully occupied with the details of organising the medical department in the London office but he paid two foreign visits, one to India in 1905–06, the other to China in 1919–20, when he helped to inaugurate the Cheeloo University at Shantung He was an effective public speaker and a persuasive writer, as may be seen in his books entitled "The Appeal of Medical Missions" and

ADDRESSES AND ORIGINAL ARTICLES

DOSAGE ABOVE THE PHARMACOPŒIAL MAXIMUM*

BY ARTHUR F. HURST, M.D. Oxon., F.R.C.P. Lond.
SENIOR PHYSICIAN TO GUY'S HOSPITAL

I CAN best introduce the subject of my lecture by quoting the following paragraph from the introduction to the 1932 edition of the British Pharmacopœia, which very clearly summarises the principles which guided the editors in stating the dosage of the drugs it contains.

"It must be clearly understood that the 'doses' mentioned in the Pharmacopœia are not authoritatively enjoined, as binding upon prescribers. They are intended merely for general guidance and represent the average range of quantities which are generally regarded as suitable for adults when administered by mouth. The maximal doses mentioned may, as a rule, be repeated three or four times in 24 hours, but it must not be assumed that they indicate the greatest amounts of drugs that may be given by repeated administration. The medical practitioner will exercise his own judgment and act on his own responsibility in respect of the amount of any therapeutic agent he may prescribe or administer. When, however, an unusually large dose appears to have been prescribed, it shall be the duty of the pharmacist or dispenser to satisfy himself that the prescriber's intention has been correctly interpreted."

As I am frequently asked by dispensers whether a prescription of mine containing a dose of a drug greater than the maximum given in the Pharmacopœia is correct, it seemed to me that I could not do better than choose the subject of dosage above the pharmacopœial maximum for an address to members of the Pharmaceutical Society.

The dosage given in the B.P. represents the average ose given to adult patients. Experience shows that nder certain conditions very much larger doses of rtain drugs can be given with advantage. In some stances, as in the case of atropine, this is due to e great variations in individual susceptibility, the me therapeutic effect being obtained in a very sceptible individual with a dose which may be nly a half or a quarter of the dose required for a atient who is unusually resistant to the action of e drug. In other cases recent therapeutical investi ations have led to the discovery that a more werful and sometimes quite different effect can be btained with a dose much greater than that given n the B.P.; the larger dose has then generally to be dministered with special precautions. In such cases would only be safe to alter the official dosage if were possible at the same time to add a note as o the method of administration.

Iron in Anæmia

In spite of the large amount of work which has en done in recent years on the treatment of anæmia d the admirable accounts published by Dr J tts on the indications and dosage of iron it is rising to find how little care is often taken in ding whether a case is one which will benefit h iron or with liver, proprietary preparations ining the two together being very popular. The age of iron is generally quite insufficient com ated organic preparations are too often ordered instead of the simple inorganic preparations, which are also the most effective, and iron injections have not yet passed into the oblivion they deserve.

Anæmia as a cause of symptoms is far more common than is generally recognised, and many middle aged women with chronic ill health, which is often ascribed to the menopause, are really suffering from an easily curable anæmia. The vast majority of cases, including those which follow hæmorrhage, respond with great rapidity to efficient treatment with iron. When I first came to Guy's in 1901 the popular Mist. ferri arsenicalis contained five grains of iron and ammonium citrate with five minims of Liquor arsenicalis. When I was Dr. Beddard's clerk in the out patient department he told me to double the dose of iron and halve that of arsenic. Later I increased the iron to fifteen grains and then to twenty grains, and Dr. Witts has shown us that we should increase it still further to thirty grains. It is unsafe to give much larger doses, as one patient of mine almost died from acute iron encephalopathy following the administration of forty grains four times a day for three weeks. We now know that arsenic is useless, and that iron given by injection is quite inert; the popular and expensive Fraisse's ferruginous serum may have some effect on the mind, but it has none on the blood. When thirty grains of iron and ammonium citrate are given three times a day, the hæmoglobin generally increases by about one per cent. a day, and still more rapidly if the anæmia is severe; for example, a youth of twenty with splenic anæmia who came in with 14 per cent. hæmoglobin was prepared for operation by giving him this dose of iron; his hæmoglobin percentage rose to 76 in 45 days.

Though there is a popular notion that iron causes indigestion and leads to constipation there are very few people who cannot take thirty grains of iron and ammonium citrate in half an ounce of water three times a day after meals as long as is necessary without unpleasant results. The anæmia, which is always present after hæmorrhage from an ulcer and which delays healing if left untreated, rapidly responds to this treatment, and so far from irritating the gastric mucous membrane the iron appears to have a directly favourable action on the ulcer and the associated gastritis. In a recent case the hæmoglobin percentage, which, two months after a hæmorrhage, was only 46 rose to 87 in 25 days.

The anæmia in carcinoma of the stomach and colon often improves very quickly, and no case should undergo operation with less than 80 per cent. hæmoglobin. Only if the hæmoglobin is very low is it necessary to hasten matters by one or more preliminary transfusions.

Liver and stomach are quite useless in all anæmias except Addison's (pernicious) anæmia and some closely allied megalocytic anæmias, such as that of sprue, and it should be reserved for such cases.

Hydrogen Peroxide and Hydrochloric Acid in Achlorhydria

Achlorhydria is a common sequel of chronic gastritis and is present in about 15 per cent. of all patients suffering from abdominal symptoms as well as in about 4 per cent. of perfectly healthy young adults. In about 75 per cent. of cases the power of secreting acid can be restored by dieting, removal of septic foci from the mouth and throat, and lavage of the stomach when fasting in the morning with dilute hydrogen peroxide (half an ounce to the pint) The hydrogen peroxide acts as a mild antiseptic and dislodges the mucus adhering to the mucous membrane The treatment is repeated daily until the washings are clear In many cases a fortnight is enough to restore the secretory activity of the stomach, but in some cases the patient has to continue with the treatment himself for several weeks

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* An address delivered before the Pharmaceutical Society of Great Britain on Dec. 11th, 1934.

Since I began using hydrogen peroxide lavage for gastritis eight years ago only about a quarter of the patients to whom I should formerly have given hydrochloric acid now require this drug. It should never be used except as a temporary measure until a second test-meal after a course of lavage has shown that achlorhydria is still present, as it is infinitely more satisfactory for a patient to provide his own acid than to have to take it from a bottle. When the gastritis is so severe that all the acid-secreting cells are destroyed, and when the achlorhydria is due to an inborn error of secretion, as it may be in the rare cases of constitutional and familial achylia gastrica, hydrochloric acid should be given.

When one drachm of dilute hydrochloric acid is mixed with five ounces of water it is only slightly weaker than natural gastric juice Thus diluted, with the addition of the juice and pulp of an orange and sugar, it makes quite a pleasant beverage, which should be taken before breakfast and with lunch and dinner for the rest of the patient's life The usual dose of dilute hydrochloric acid is quite inadequate This was first clearly shown by some experiments made in cases of Addison's anæmia, a condition which is almost invariably associated with incurable achlorhydria, by Dr. Maurice Shaw when my house physician in 1922 He found that one drachm of dilute hydrochloric acid sipped during the hour following a test-meal was rarely sufficient to neutralise the alkaline contents of the stomach, so that no free acid appeared. Occasionally one and a half drachms produced a normal curve and two drachms a hyperchlorhydric curve (Fig 1), but more frequently two drachms were required to produce a normal curve of acidity (Fig 2) In rare instances even two drachms did not lead to the appearance of free acid

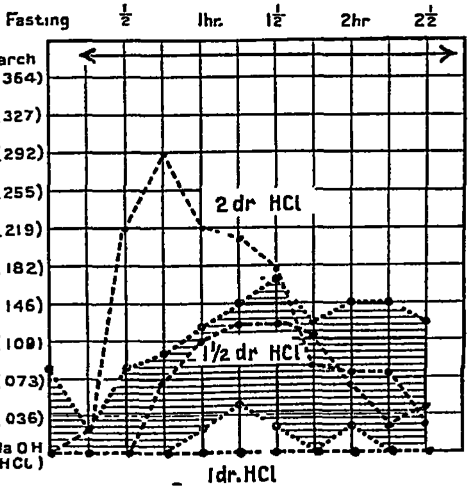

FIG. 1.—Curves showing amount of free HCl present in a case of Addison's (pernicious) anæmia with achlorhydria when 1 drachm, 1½ drachms, and 2 drachms respectively of dilute hydrochloric acid, suitably diluted, were sipped at intervals during the hour following consumption of a test-meal The shaded area represents the limit of free HCl in 80 per cent of normal people

Hexamine as a Biliary Antiseptic

It has been known for many years that hexamine is excreted by the bile, but Dr F A Knott was the first to prove definitely that it acts as a biliary antiseptic in spite of the bile being alkaline, although in the urinary tract it is inactive unless formalin is set free by the acid urine Pure bile obtained through a duodenal tube has no antiseptic action, but if large doses of hexamine are given, the bile, which can be shown to contain unaltered hexamine, is strongly antiseptic, and any bacteria which are present in it before the treatment begins disappear Formerly the maximum dose of hexamine which could be given with safety was limited by the supposed necessity of keeping the urine acid But hexamine is just as efficient a biliary antiseptic when sufficient alkali is given to make the urine permanently alkaline; under such conditions no formalin is set free, and enormous doses can be administered without causing any bladder irritation A mixture containing sixty grains each of sodium bicarbonate and sodium citrate in two ounces of water is given after breakfast, after tea, and last thing at night after drinking a glass of milk or water. The reaction of the urine is tested every time it is passed, as soon as it is found that the urine is constantly alkaline, if necessary after the dose of the alkalis has been increased, a hundred grains of hexamine is added to the mixture so that three hundred grains are taken a day The treatment can be continued for periods of six weeks The hexamine sterilises the bile-ducts and gall-bladder, and, when combined with non-surgical biliary drainage by means of Epsom salts, it results in the cure of most cases of cholecystitis. This treatment should be given for a week or two before and after operations on the gall-bladder and bile-ducts in order to guard against septic complications In cases of severe infective cholangitis with jaundice, high temperature and rigors, it has sometimes appeared to save the life of the patient

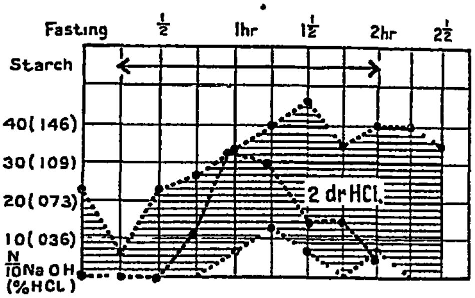

FIG. 2.—Curve showing amount of free HCl present in a case of Addison's anæmia, with achlorhydria when 2 drachms dilute hydrochloric were taken in the manner described under Fig. 1

Hexamine is excreted into the cerebro-spinal fluid and has been found by experiment to prevent the development of poliomyelitis in monkeys inoculated with emulsion of the spinal cord from fatal cases I think, therefore, that large doses are worth giving in the manner I have just described to contacts in poliomyelitis epidemics, and possibly also during the acute stages of encephalitis and for the cerebral complications of ear and sinus disease

I should like to suggest that in the next edition of the B P explanatory notes should occasionally be given under the head of dosage Thus in the 1932 edition the dose of hexamine is given as ten to thirty grains. But five to fifteen grains is the correct dose when it is used as a urinary antiseptic, and fifty to a hundred grains as a biliary antiseptic For the former acid sodium phosphate or similar drug must be given to keep the urine acid, and for the latter alkalis must be given to keep it alkaline The higher pharmacopœial doses—fifteen to thirty grains—are too small for biliary antisepsis and too large for urinary antisepsis, as if given alone and especially if given with acid sodium phosphate they would be very liable to cause severe hæmorrhagic cystitis

Atropine in the Treatment of Ulcer

There is no doubt that the presence of free acid in the stomach is an essential factor in the development of gastric, duodenal, and anastomotic ulcers, and that such ulcers tend especially to develop in individuals with the hypersthenic gastric constitution in which more than the average quantity of acid is secreted Successful treatment largely depends upon choosing a diet which calls forth as little secretion as possible and has a high neutralising power Alkalis are given to neutralise still more of the free acid, and olive oil and atropine to inhibit its secretion It is a familiar fact that some people are much more susceptible to the action of atropine than others Its influence on salivary secretion is approximately parallel to its influence on gastric secretion In order, therefore to obtain a maximal effect on the stomach the dose should be increased until the largest quantity is given which does not make the mouth unpleasantly dry I give 1/200th grain of atropine sulphate dissolved in a drachm of water before three of the feeds and a double dose last thing before going to sleep, as it is particularly important to inhibit the continuous secretion of acid during the night, when there is no food in the stomach which can partially neutralise it Both doses are then increased by ten minims of the mixture—i.e., 1/1200th grain—every day until the patient complains of unpleasant dryness of the mouth or paralysis of accommodation After reducing the doses by ten minims they are continued throughout the period of treatment As the atropine dries the mouth it may be assumed to dry the stomach, and actual tests have shown how effective it is in reducing the quantity of free acid present (Fig 3 (A) and (B)) It is impossible to guess beforehand what will be the adequate dose in any given individual Occasionally a patient cannot take more than the initial 1/200th grain three times a day and 1/100th grain at night, the majority can take about 1/100th grain whilst occasionally as much as 1/40th grain is found to be the correct dose for the day and 1/40th plus 1/200th for the night It is important to increase the dose in this way as I believe that 1/200th grain would be without any effect on the last patient though sufficient for the first, in other words, 1/200th grain in one individual is equivalent to 1/40th grain in another

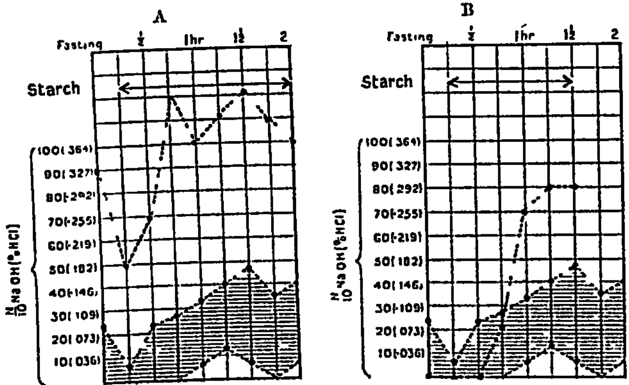

FIG 3—Test meals of patient with hyperchlorhydria (A) with no previous medication, (B) one hour after 1/40th grain of atropine sulphate by mouth

Hyoscine, Stramonium, and Pilocarpine in Parkinsonism

About twenty five years ago I found that the dose of hyoscine which could be safely given to patients with paralysis agitans could be greatly increased by combining it with pilocarpine, which prevented dryness of the mouth and paralysis of accommodation without in any way diminishing the calming effect on the tremor, this had been discovered about 1895 by Erb It was consequently possible in most cases to give 1/50th grain hyoscine hydrobromide, in many cases 1/20th grain and occasionally as much as 1/8th grain three or four times a day, without any troublesome dryness of the mouth, paralysis of accommodation or other unpleasant symptom being produced I had many patients who were thus enabled to take large doses continuously for several years Though the tremor was not often completely controlled, it was almost invariably rendered much less trying, the effect being considerably greater than with the maximal doses of hyoscine given by itself in the usual way.

In view of the close resemblance of some of the post encephalitic disorders to paralysis agitans it was natural that hyoscine should be tried for the former Quite unexpectedly it was found to have comparatively little effect on the tremor, which is generally a much less prominent symptom than in paralysis agitans, but to exert a favourable influence on the rigidity, whereas the rigidity of paralysis agitans may remain completely unaffected by the drug, even when given in large doses with pilocarpine in the manner I have described Observations carried out by A J Hall with belladonna and by L A Carmichael and F H K Green with stramonium showed that these drugs are even more effective than hyoscine

It occurred to me in 1928 that a combination of pilocarpine with hyoscine or stramonium might make it possible to give a larger dose of the latter drugs and thereby obtain a more favourable effect in post encephalitic parkinsonism as well as in paralysis agitans The result has been most satisfactory In every case improvement has occurred, and in some the whole life of the patient has been made infinitely more happy as a result of overcoming a good deal of the muscular rigidity One patient who had been completely bedridden for over a year was able to get about again within a fortnight, and some who were completely unable to dress, wash, or feed themselves and were dependent upon others for everything, can now carry out all the essential activities of life without help

I begin by giving the patient fifteen minims of tincture of stramonium in half an ounce of water on waking, after lunch, and after tea If the stiffness causes disturbed nights by preventing the patient from turning over in bed, an extra dose is given before going to sleep One drachm is added to each of the three doses of the mixture on alternate days, so that in eight days the total dose is doubled. The gradual increase in the dose is continued until the patient begins to complain of unpleasant dryness of the mouth or paralysis of accommodation. Pilocarpine nitrate 1/10th grain is then added to the latest dose of stramonium, and the mixture is prescribed in half an ounce of water. One drachm is again added to each of the three doses of the mixture on alternate days until sufficient relief is obtained or slight toxic symptoms appear—the most common being paralysis of accommodation—in spite of the added pilocarpine. By this time the dose is generally at least sixty minims of tincture of stramonium with perhaps 2/5ths grain of pilocarpine nitrate. The exact proportion of pilocarpine and stramonium may require modification. Finally a prescription is given for the full dose of stramonium and pilocarpine in a single half-ounce of water.

Incidentally I should like to protest against any radical change in the strength of drugs being introduced in new editions of the B P unless urgently necessary. No explanation has been given so far as I am aware for halving the strength and consequently doubling the dosage of tincture of stramonium in the last edition Consequently the innumerable physicians who are in the habit of giving this drug for asthma and for parkinsonism must have been giving their patients half the intended dose during the last two years, for I have not yet found anybody who was aware of the change that had been made

Morphia for Incurable Pain

In spite of all the modern advances in therapeutics we must still often rely upon morphia for the alleviation of pain Inoperable cancer is not necessarily very painful, but when it involves the spine and in many cases of carcinoma of the liver and of the pelvic organs the pain is excessively severe By the fearless use of morphia it is always possible to keep a patient with this terrible disease comparatively happy and completely free from pain. There is obviously no need to fear the development of a drug habit in a dying patient, but most doctors are curiously averse to giving the huge doses which may be required in such cases I do not think that the various substitutes for morphia have any special advantage The dose should be found by experiment which, when given at sufficiently frequent intervals, keeps the patient completely free from pain As the tissues quickly develop the power of destroying increasing quantities of morphia so that only a small proportion is left to exert its analgesic effect, the dose has to be steadily increased in order to remain adequate The dose required during the last week of life in a patient who survives for an unusually long period may be huge—as much as fifty grains a day, but it should be remembered that this is really equivalent to about one grain a day at the onset of treatment, most of the morphia being destroyed in the liver and other organs Many patients with secondary cancer of the liver and spine live for many weeks, and even many months, and I am inclined to think that the morphia often delays death—its one disadvantage, though this is more a disadvantage to the unhappy relatives than to the sleeping patient For a proper dose is one which keeps the patient in a continuous state of twilight sleep; the sleep is often dreamless, but when dreams occur they are generally happy ones The patient is easily roused three or four times a day to take a little nourishment, but he only wakes sufficiently to smile and murmur a few words

Adrenaline in Asthma

The pharmacopœial dose of adrenaline is both too large and too small It is too large for habitual use in ordinary cases of asthma and too small for use in the exceptional cases of status asthmaticus In spite of recent advances in our knowledge of asthma it is comparatively rare that a patient is given such complete relief that he never has another attack It is therefore necessary in almost every case to devise some treatment for the asthmatic paroxysm itself.

In the treatment of the asthmatic paroxysm the preponderating activity of the vagal over the sympathetic nerve-supply to the bronchi can be overcome by means of drugs, such as atropine, which paralyse the vagus, or by adrenaline, which stimulates the bronchodilator fibres of the sympathetic The inhalation of fumes from powders containing stramonium or belladonna, which was formerly the universal method of treatment, had the grave disadvantage of causing chronic bronchitis by irritating the bronchial mucous membrane. This treatment should never be used, as the opposite method of restoring the balance by means of adrenaline has no such disadvantage and is also more promptly and more constantly effective. The patient should be taught to inject the adrenaline himself, as if he does this at the first sign that an attack is developing it will be aborted, and one or two minims will often be sufficient, though five or more would have been required had he had to wait for a doctor or nurse to give the injection at the height of the attack This small dose gives rise to none of the unpleasant symptoms often caused by larger doses, which sometimes make a patient prefer the asthma to the adrenaline, and as it does not even raise the blood pressure there is no danger of damaging the arteries Its use has in many cases the further justification of making good a deficiency in the secretion of adrenaline, just as thyroid preparations do in myxœdema The treatment also reproduces the way in which relief may on rare occasions occur under natural conditions If an individual during a severe attack of asthma comes under the influence of sudden fear or anger, the two emotions which W. B Cannon showed stimulate the secretion of adrenaline, the attack immediately ceases, the patient having had an "autogenous dose" of adrenaline We may hope that the time will come when asthma will be curable, but until that consummation has been attained, the proper use of adrenaline deprives asthma of most of its terrors, and makes it possible for every asthmatic to live a life of moderate activity. The patient should be provided with a pocket case containing a small bottle of adrenaline, a special small all-glass hypodermic syringe with very fine bore so that minims and half minims can be accurately measured up to a maximum of seven minims, an "iodine pencil" and a spare needle

The rare condition of status asthmaticus, in which severe asthma continues uninterruptedly for days or weeks and may end in fatal exhaustion, can always be arrested by the method of continuous adrenaline injection which I first used about ten years ago The needle is kept in position with a full syringe, and after an initial injection of a dose which is known to cause no unpleasant symptoms, one or more minims are injected every 15, 30, or 60 seconds, according to the patient's reaction, the rate being varied until it is found how frequently the injection can be made without tachycardia or other symptom arising The injections are continued, if necessary, for even half an hour or more, relief always follows and generally manifests itself by the patient falling into a deep sleep, which may be the first he has had for several days

Anaphylaxis can also be most efficiently treated by this method of injecting adrenaline which is far more effective than occasional injections of larger doses. If adrenaline is always at hand when a patient is given serum or other treatment which may cause anaphylactic reaction, the latter should never prove fatal

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PULMONARY ASBESTOSIS

A REVIEW OF ONE HUNDRED CASES

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During the last few years we have from time to time reported the result of our observations of the effects of the inhalation of asbestos dust as seen in patients attending a chest hospital or revealed at autopsy Our studies commenced in the year 1928, and a preliminary paper dealing principally with radiographic appearances was published by one of us in the following year In 1930 we reported our findings in a series of 37 asbestos workers who had been examined at Victoria Park As we now have had the opportunity of studying 100 cases, the time seems opportune for a brief survey of the whole group

ANALYSIS OF CASES

Our cases may be divided into four chief groups

I.—PULMONARY ASBESTOSIS

Fifty three cases (19 males, 34 females) 12 deaths (4 males, 8 females), including 2 with carcinoma of the lung and 1 with a few deposits of growth in the pleura In the cases still alive and under observation diagnosis rests upon (a) typical appearances of the radiogram (b) symptoms and physical signs of fibrosis, and (c) presence of asbestosis bodies in the sputum These three diagnostic points are arranged in order of merit Twenty four cases ([illegible] males, 13 females) were positive on all three counts, 19 (all females) had positive radiograms and clinical symptoms and signs, but no sputum was available—or if available no asbestosis bodies were found; 9 (5 males, 4 females) gave positive clinical signs and asbestosis bodies were present in the sputum but radiograms were [illegible] not available or failed to show definite evidence of [illegible]; 1 (male) had a positive radiogram and asbestosis bodies in the sputum but no clinical signs or symptoms

II.—PULMONARY ASBESTOSIS WITH ACTIVE TUBERCULOSIS

Twenty-one cases (4 males, 17 females) Of these 11 ([illegible] males, 8 females) were fatal One had a tuberculous [illegible], one a pyopneumothorax and lardaceous disease the others pulmonary tuberculosis Ten cases (1 male 9 females) are still alive All have tubercle bacilli and asbestosis bodies in the sputum

III.—PULMONARY ASBESTOSIS WITH OBSOLESCENT TUBERCULOSIS

Nine cases (4 males, 5 females) This group emphasises the fact that obsolescent tuberculosis is not necessarily reactivated by asbestosis Three cases have been fatal (1 male, 2 females), of those still under observation 2 (females) have radiograms exhibiting typical asbestosis and healed apical tuberculosis, with asbestosis bodies in the sputum, and 4 cases (3 males, 1 female) have asbestosis bodies present in the sputum and radiograms showing obsolescent tuberculosis but indeterminate or negative as to asbestosis

IV.—DOUBTFUL CASES

Seventeen cases (6 males, 11 females) under observation All but one have suggestive symptoms and signs but the radiograms are indeterminate, and with two exceptions the sputum, where available, contains no asbestosis bodies Of these exceptions one has indefinite symptoms, signs of emphysema, and a negative radiogram, but asbestosis bodies are present, the other has no physical signs or symptoms and a negative radiogram, but has asbestosis bodies in the sputum

THE CLINICAL PICTURE

The picture of pulmonary asbestosis is that of a pneumonoconiosis occurring in a factory in which few precautions had been taken to protect the workers from a danger; the gravity of which was not realised Happily these conditions are now a thing of the past and elaborate precautions have been taken to protect the workers There is thus good reason to believe that the disease is now under control, though it seems probable that workers exposed to the dust under the old conditions will continue to present themselves for examination for some time to come There is no need to amplify the descriptions of pulmonary asbestosis already given elsewhere The symptoms are indeed those common to all forms of pulmonary fibrosis uncomplicated by bronchial dilatation or pulmonary excavation—stubborn cough with little expectoration, discomfort or dull pain in the chest occasionally perhaps a streak of blood in the phlegm, and dyspnœa It is this last symptom of which the patient complains The distress occasioned by constant breathlessness is so great that the disease might almost be described as monosymptomatic It is the patient's first and last complaint In the earlier stages dyspnœa is only apparent during exertion—"I found I could not hurry to work in the morning!"—in the later stages the act of undressing or even the effort required for speech may cause the patient to pant for breath When asbestosis is complicated by tuberculosis, broncho-pneumonia, or other thoracic disease, the symptoms of these will be added, but the dyspnœa of pneumonoconiosis can still as a rule be recognised [illegible] nutrition is very evident in the terminal stages when the patient may pass into a condition of [illegible] cachexia pulmonary fibrosis which must precede graver developments, and it is not surprising that the pathologist sometimes discovers post-mortem evidence of fibrosis not recognised during life

In diagnosis at the present time we have to rely on a history of exposure to asbestos dust as our starting point. The symptoms described by the patient may supply a clue, for the malingerer does not as a rule emphasise dyspnœa as his chief disability. In the physical examination the patient's appearance should receive special attention. In advanced cases the "earthy" character of the complexion and a slight violet tinge in cheeks or lips are noteworthy The physical signs supply suggestive but never conclusive evidence They are those of a basal fibrosis, and the fine nature of the pulmonary scarring is indicated by fine dry crackles not dissimilar to those often heard over the bases of emphysematous lungs More superficial crackles produced by the movements of a damaged pleura are often mingled with the fibrotic râles

The radiographic picture is that of a fibrosis of fine type affecting the lower two-thirds of the lung fields; the scarring is as it were etched in Attention may be drawn to a difficulty constantly encountered when a delineation of the basal portions of the lungs is required The diaphragmatic shadow censors the bases of the lungs, and in a radiogram taken with the ordinary antero-posterior technique as much as two inches of the lung may be blotted out The extent of this "silent" area can be demonstrated in the normal lung by a lipiodol injection, the result of which will surprise those accustomed to regard the supra-diaphragmatic area as the lung base. Again, a lateral view of the lung, if the interlobar septum is thickened or if the middle lobe is opaque as the result of, for example, an epituberculous exudate, shows that the lower margin of the middle—i e, of the lower portion of the right upper—lobe corresponds approximately with the shadow of the cupola of the diaphragm At a recent meeting of the Röntgen Society, Dr L A Rowden pointed out that a more extended view of the lung bases can be obtained by the simple expedient of placing the patient in the dorsal position and centring the tube over the brow. We have tried this method and verified its efficacy.

The exact diagnostic significance of asbestosis bodies in the sputum is doubtful As pointed out by one of us (S R. G) the formation of an asbestosis body is evidence of tissue change We cannot assume, however, that the expectoration of a few asbestosis bodies implies that pulmonary fibrosis has already occurred If we could make this assumption the problems of diagnosis and claims for compensation would be simple Nevertheless the microscope will sometimes reveal commencing fibrosis in lung sections where ante-mortem radiograms failed to reveal evidence of disease. The clinical methods at present available do not enable us to determine incipient disease The asbestosis body is simply evidence of exposure to asbestos dust and of tissue reaction thereto This tissue reaction may be accompanied by fibrosis, but it does not necessarily follow that this is sufficiently extensive to produce symptoms or clinical signs or abnormal shadows in a radiogram—or we might add to justify compensation.

PROGNOSIS

As the disease has only been recently recognised as a clinical entity our present ideas on prognosis may require modification. In a previous article we stated that the cessation of exposure to asbestos dust did not avail to check the spread of disease This is certainly often true, but we have now seen patients whose condition appears to have remained stationary since stopping work in the factory That even serious damage to the lungs is not incompatible with many years of tolerably comfortable existence is proved by such an example as that of a patient who was still able to carry out administrative duties at a factory when nearly 40 years' exposure to the dust had caused a fibrosis involving all except the apical regions of the lungs We recently examined a female patient, at the request of Dr. C. McShane, who after a period of two and a half years' employment as a spinner had retired to get married. Twenty years later symptoms, signs, and X ray pictures supplied convincing proof of pulmonary asbestosis of a moderate degree of severity, and asbestosis bodies were readily demonstrated in the sputum But despite some disability the patient, whose period of service did not entitle her to compensation, described herself as fairly comfortable, and she was still able to perform her household duties. It is none the less obvious that any patient who betrays symptoms of fibrosis or in whom any evidence of fibrosis is discovered, whether by physical or radiological examination, should at once cease working in any dusty occupation A quiet life, preferably in the country, and avoidance of the risk not only of dust inhalation but of catarrhal infection, provides the best safeguards against an aggravation of incipient disease

Septic bronchitis, broncho-pneumonia, and pulmonary tuberculosis are the commonest terminal complications of the disease

COMMENTS

Occupation—An elaborate analysis of occupational factors is not possible in this short article All the 67 women in our series had been exposed to asbestos dust in the same factory They were employed in the following departments. spinning, 24, weaving, 5; mattress making, 9, carding and opening, 11, and miscellaneous or unstated, 18 Twenty-two of them began their employment before the age of 18, which is now no longer permitted under Home Office regulations The shortest exposure was six months (two cases) and the longest 15 years

The 33 men came under several categories About two-thirds of them were employed in the same factory as the women and had performed a variety of jobs The others included an elderly man who was himself the owner of a small factory, a van boy, aged 18, whose spare time during two and a half years' employment had been spent in mixing powdered asbestos in an open yard, a middle-aged boiler riveter who had served his apprenticeship as a youth in a shop where asbestos was used for lagging pipes, and a man who had been employed handling asbestos mattresses in the open air at an aerodrome Among the men the shortest exposure was 11 months (disintegrating department), and the longest about 40 years (clerical and administrative work) Four of the group began their employment under the age of 18

Pathology—In addition to the autopsies mentioned above, 10 post-mortem examinations have been made by one of us (S R G.) of cases we had not seen during life (3 males, 7 females), but these are not included in our 100 cases Macroscopically the fibrosis is best seen in the lower lobes, and adherent pleura is very common, but silicotic nodules have not been encountered Histologically the disease begins in the respiratory bronchioles and alveolar ducts, and is characterised by a cellular reaction of ononuclear phagocytes and asbestosis giant cells ollowed by the formation of a reticular fibrosis [1]

Tuberculosis and Asbestosis —In a previous article [2] ealing with tuberculosis and asbestosis we recorded 0 cases of active tuberculosis in 57 cases of pulonary asbestosis (17 5 per cent) The figures have ow reached 21 cases of active tuberculosis out of 00 (21 per cent) It must be borne in mind, howver, that these figures do not indicate the perentage of cases of asbestosis with tuberculosis in he industry We have been dealing with a group, mostly from one factory, who were sufficiently ill o seek advice at hospital In discussing this quesion at length, Merewether [3] considers, after a review of the whole industry, that the data are too fragmentary to be dogmatic at the moment but that whatever "the added risk of tuberculosis may be in asbestosis, it is less than that associated with silicosis" We hope to publish our material on this subject at a later date.

Complications —Apart from pneumonia and pulmonary sepsis and complications arising from tuberculosis, there have been none definitely attributable to the asbestosis with the exception of two instances of spontaneous pneumothorax diagnosed by X ray, and apparently unassociated with tuberculosis, which may have been due to the rupture of emphysematous bullæ

We are indebted to our colleagues at Victoria Park for permission to quote certain cases seen by them

For a full account of pulmonary asbestosis in all its bearings the reader is referred to Dr Merewether's exhaustive paper [3]

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SURGICAL ASPECTS OF THE SPASTIC COLON AND THE PREDIVERTICULAR STATE *

By A L D'ABREU, M B Birm, F R C S Eng

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MANY patients suffering from colon dysfunction, part from proved examples of carcinoma divertic litis, and ulcerative colitis, are admitted to surgical s well as medical wards for investigation Of this roup the majority are discharged with intact bdomens and uneasy minds, others undergo fruitless aparotomy under general anæsthesia, a minority, owever, operated upon under spinal anæsthesia, isplay a fascinating and important living pathology

Neoplastic, ulcerative, and fully developed diverticular diseases of the colon have no place in this aper, which concerns a group of cases suffering rom abdominal pain, mainly left sided but with portant references to other areas and sometimes ssociated with blood and mucus in the stools lternative diarrhœa and constipation occur in equal roportions Dyspepsia is often an important and leading symptom Concentrating mainly on those rediverticular conditions, until recently mainly of radiological interest, an attempt will be made to establish spasm as an important ætiological factor in the formation of diverticula in the colon The disquieting thought that surgery, apart from dealing with complications such as obstruction, perforation, abscess formation, and fistulous communications, only offers a dangerous operation for the cure of colon diverticulitis, makes investigation of the earlier prediverticular state of tremendous importance Advances in the knowledge of the ætiology may enable effective medical treatment to be employed If spasm be an important factor, the administration of belladonna in suspect prediverticular states will be of great value as a prophylactic measure

SPASTIC COLON

Spastic colon is a well-recognised entity Dr Stacey Wilson first drew attention to it in his book "Tonic Hardening of the Colon" [1], a tender, hard, contracted colon may be palpated in patients whom I have grouped into three classes

(*a*) The commonest sufferer is described by Dr Hardy [2] as being "the emotionally unstable type of individual whose colon is unstable also" Often the patient is a nervous female, thin and unhappy, perennially dyspeptic, ailing and constipated, through whose thin abdomen the racing aorta and a hard tender colon can be palpated with ease Radiological and biochemical examination discover an active tonic stomach with pylorospasm and hyperchlorhydria I have no evidence, nor do I think, that these patients proceed to diverticular formation They are frequently met with in the surgical out patient room, it is no place for them and they repay surgery with groans and a constantly increasing list of symptoms More than one has undergone pyloroplasty, many appendicectomy, without the least relief of their dyspepsia

It is important to remember this class of patient when investigating cases of pylorospasm Cannon and Murphy [3] have produced pylorospasm by traumatising intestines and have declared its occurrence in these circumstances to be due to a viscero visceral reflex Clinically, suitable general treatment combined with the administration of medicine containing belladonna, the tincture of hyoscyamus, the perchloride of iron and of mercury, often leads to great improvement

(*b*) Occasionally spastic colon occurs in the young athletic man who suffers from constipation, pain may be a prominent feature and may lead to operation for supposed acute abdominal conditions No abnormality is seen other than generalised enterospasm

(*c*) Far different is the last group represented by the rather fat middle aged man muscular and athletic in his younger days, sane and sanguine in outlook but worried by an alteration in his bowel habit and because his ample meals formerly enjoyed with relish cause indigestion and discomfort, frequently defæcation is unsatisfactory and irregular Small internal hæmorrhoids often develop and the descending colon is tender and hard Rectal examination is more painful than usual, but once the sphincter has been passed the rectum itself is normal We will consider later that the important pathological change in these cases lies in the muscle layer and not in the mucous membrane mucus and blood are therefore not always present. The test meal (in all the cases so far investigated) shows hyperchlorhydria. Outline in the radiological picture of the barium enema, as in the clinical picture is indefinite

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* Based on a short paper read before the Association of urgeons of Great Britain and Ireland at Birmingham on May 3rd 1934

(Fig. 1). There is no evidence of defective filling to confirm the presence of a suspected neoplasm; nor is there any clear picture of diverticulitis. In some cases areas suggestive of the prediverticular state (to be described later) are seen these appearances are not those of a normal sigmoid and descending colon and the haustrations are badly delineated Sigmoidoscopy adds to the list of negative or doubtful findings, but may eliminate carcinoma as in the case illustrated in Fig. 2 in which the symptoms and the constriction in the barium enema suggested malignancy: direct inspection of the mucous membrane enabled me to exclude carcinoma.

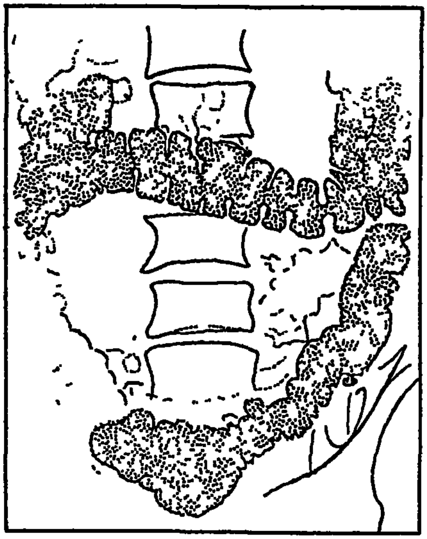

FIG. 1.—Barium enema Note irregular outline of sigmoid colon (see text).

Laparotomy may then be done: if under general anæsthesia this will rarely disclose any abnormality; if, however, spinal anæsthesia is employed, the descending and sigmoid colon will show reddened contracted areas that from time to time pass into spasm. By observing such cases surgery has provided valuable pathological evidence that spasm and muscular hypertrophy are important factors in the sequence of events that lead through the prediverticular state to the fully developed stage of diverticular formation. Prof. Seymour Barling[4] was the first surgeon to note a case explored under spinal anæsthesia in which a reddened colon suddenly contracted to the size of an index-finger, became intensely rigid, and between the tæniæ of which, pearl-like buds extruded themselves in a regular series As the spasm relaxed the small bud-like diverticula receded. The X ray appearances showed the early changes associated with the prediverticular state. The patient was a male, aged 43, who complained of the passage of blood and mucus in his stools.

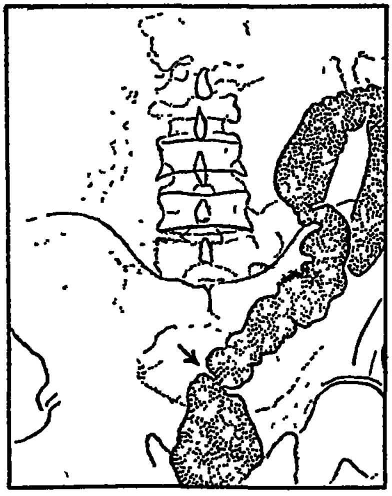

FIG. 2—Note constriction at pelvi-rectal junction

THE PREDIVERTICULAR STATE

The Leeds school solved the mystery of the time-honoured diagnosis of "sigmoiditis," and Lord Moynihan, Maxwell, Telling, and Gruner described clearly the pathology and clinical picture of diverticulitis of the colon. Spriggs and Marxer[5] in an exhaustive radiological dissection of the subject demonstrated the three stages of this important condition: (1) The prediverticular stage; (2) the appearance of uninflamed diverticula (diverticulosis), and (3) the final stage of "diverticulitis" in which superadded inflammation grossly changes the clinical, pathological, and radiological pictures

The radiographic appearance of the prediverticular state (Fig 3) is well summarised by Spriggs and Marxer as "a ragged outline of the wall of the bowel which does not dilate even in the most favourable position" and they point out that normal segmentation is lost. Discounting its symptomatology they suggest that clinically the condition is rarely suspected and that symptoms are due to the associated diverticula which usually coexist. Such a view holds out little hope of early treatment and is, I feel, not justified

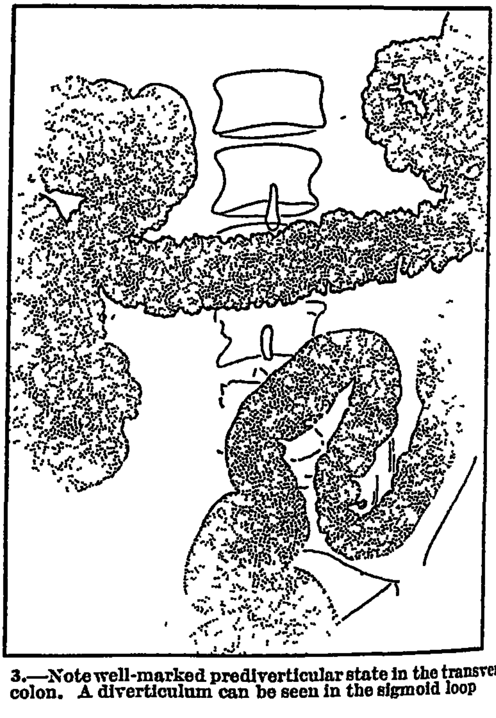

FIG 3.—Note well-marked prediverticular state in the transverse colon. A diverticulum can be seen in the sigmoid loop

I have studied four cases shown radiographically to be in the prediverticular state unaccompanied by diverticulosis and in which laparotomy was carried out because of pain and the passage of blood and mucus The case of Mr. Barling's referred to above is of this type In one of the four cases mentioned, laparotomy was done by a surgeon under general anæsthesia and no abnormality was discovered. A barium enema taken some months *later* showed the appearance of prediverticulosis

PATHOLOGY AND ÆTIOLOGY OF THE PREDIVERTICULAR STATE

The living pathology has been indicated briefly and can only be studied under spinal anæsthesia, this is explained as follows Peristalsis in the large bowel depends on the automaticity of the muscular fibres, the myenteric plexuses of Meissner and

Auerbach, and nervous impulses from the vagus and the sacral parasympathetic, relaxation, except in the case of the sphincters, depends on sympathetic nervous influences. General narcosis paralyses the parasympathetic system, while spinal anæsthesia, on the other hand, prevents the action of those sympathetic fibres which flow out to the abdominal viscera and either leaves the parasympathetic unaffected and in undisputed domination (Eppinger and Hess[6]) or more probably allows the intrinsic dynamics of the bowel free unimpeded action Learmonth[7] has produced excellent evidence that there is a high degree of autonomy in the plain muscle of the bowel and its intrinsic nerves

In portions of bowel in the prediverticular state removed along with areas of established diverticulation, the most notable change seen is hypertrophy of the circular muscle coat which projects as bands into the lumen of the bowel (seen in the accompanying drawings (Fig 4) taken from Mr Edwards's Hunterian lecture[8] on diverticula of the colon and appendix) The increased power of the circular muscle contraction, aided perhaps by the concertina like action of the tæniæ coli as first suggested by Sir Arthur Keith, tends to force out the mucous membrane between the areas of hypertrophied muscle and following the line of the blood-vessels to form diverticula

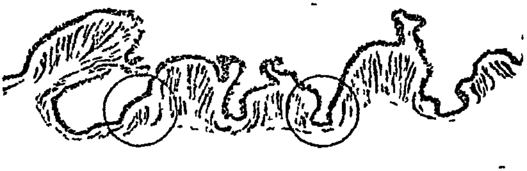

FIG 4B.—The prediverticular state A more advanced stage

What causes this muscle to hypertrophy? Here appears to be the keynote of the ætiology It is developing at a time of life when muscular tissue elsewhere is tending to be replaced by fat The suggestion that the cause lies in sympathetic over activity is illogical, such a state induces dilatation not spastic contraction One rather expects to find excessive parasympathetic activity and to seek for a picture of vagotonia Eppinger and Hess have pointed out the coexistence of pylorospasm and lospasm in vagotonics Kleinschmidt[9] has reported case of megalocolon in which autopsy showed a ficiency of the second and third sacral nerves and hich he considered had deprived the colon of its rasympathetic nerve supply Adamson and Ian Aird[10] succeeded in producing experimental megalocolon in the cat by removing the parasympathetic nerve-supply and leaving the sympathetic in unopposed supremacy

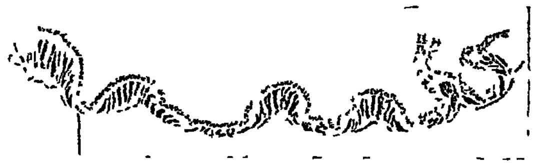

FIG 4A.—The prediverticular state A longitudinal section of the sigmoid colon The line points to a vessel at the base of the depression This and the sections following have been magnified between three and four times (H C Edwards) Note hypertrophy of circular muscle

There is some evidence to support this theory of parasympathetic overaction I have found hyperchlorhydria to be present in spastic prediverticular subjects, moreover belladonna (a parasympathetic antagonist) relieves this condition In cases where presacral and lumbar colonic neurectomy has been done, subsequent barium enemata may present radiological appearances reminiscent of those seen in the prediverticular state Fig 5 is a barium enema picture made from a patient on whom I had performed presacral and lumbar colonic neurectomy The spastic irregularity in the sigmoid colon was seen in further radiograms

In a series of cases kindly investigated for me by Mr Stammers[11] after lumbar sympathectomy had been performed by him for vasospastic conditions in the legs there is however no alteration in the normal barium enema picture of the bowel It is therefore not easy to prove that this hypertrophy of the circular muscle is due to overactivity of the parasympathetic system It is, however, a clinical fact of great interest that tobacco smoking frequently aggravates the symptoms of these prediverticular and spastic colon subjects Nicotine diminishes activity both in the sympathetic and parasympathetic systems, but as the normal balance favours the vagus and the sacral autonomic outflow, *increased activity of the* motor function leads to excessive peristalsis and spasticity It is well to note also that pylorospasm is often present in heavy smokers

In discussing theories of diverticular formation it is easy to be destructive. Many authors have considered the cause to be one of senile degeneration H C Edwards[8] has demonstrated that the age incidence of diverticulosis is much earlier than formerly believed and that cases occur in middle as well as in old age (Fig 6) In my series several of the undoubted prediverticular cases were under the age of 43 the youngest was 31, and the condition was confirmed at laparotomy under spinal anæsthesia

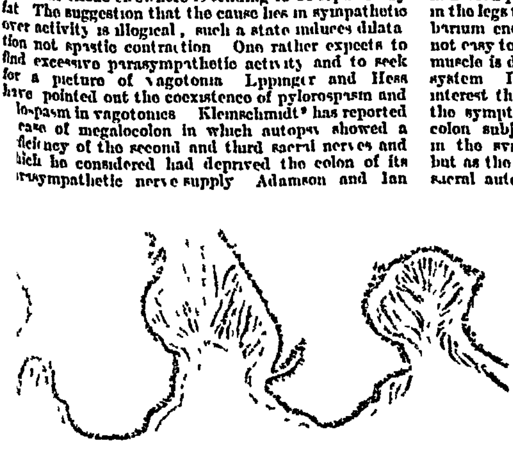

FIG 4C.—The prediverticular state Early diverticula

The pathogenesis as observed in the change from the prediverticular state to that of diverticulosis leaves little room for a developmental theory of causation.

In the usual appeal to infection Marxer and Spriggs favour oral sepsis and postulate the frequent coexistence of osteo-arthritis of the spine as proof of septic absorption; clinicians however now consider osteo-arthritis as degenerative rather than infective in origin. The sepsis theory is easy to attack; the incidence is vastly greater in the male than female sex; surely sepsis is not correspondingly greater in one than the other? Nor do these prediverticular patients show evidence of toxicity clinically or pathologically; there is no leucocytosis until the advanced stages of diverticulitis.

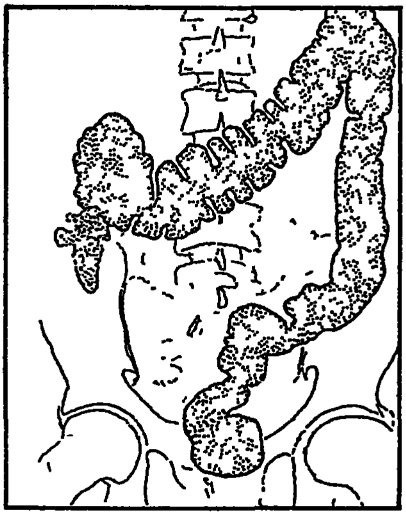

FIG. 5.—Case in which presacral and lumbar colonic neurectomy had been performed

Constipation as a cause is rebutted by the greater male-incidence since this disorder is clearly commoner in the female To obviate this objection Lockhart-Mummery considers flatus, which is more excessive in the male, to be the cause. Ian Fraser [12] of Belfast, has pointed out to me that the sigmoid colon is consistently free from gas and provides radiographic evidence that air distension is greatest in the ascending colon and in the upper rectum An examination of prediverticulous areas shows absence of gas

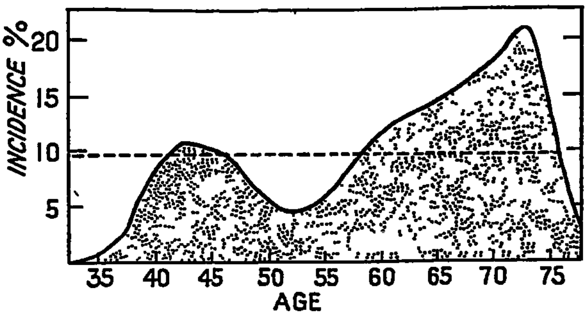

FIG. 6.—Graph showing age-incidence of diverticula of the colon. (H. C Edwards.)

In conclusion, it has been my object in considering a group of cases of colon dysfunction to establish spasm and hyperactivity of the circular muscle of the bowel as factors of the greatest importance in the formation of diverticulous changes in the colon and to suggest that the cause of this may be excessive action of the parasympathetic system supplying the abdominal viscera In the group examined belladonna combined with hyoscyamus has proved of clinical value in treatment. I believe that a careful study of this type of case by clinical, radiological, and test-meal examinations will enable a diagnosis of spastic colon and prediverticulosis to be made in patients who too frequently are vaguely diagnosed as suffering from "colitis" and are sometimes operated upon to exclude malignant disease. If such exploratory laparotomy be performed spinal anæsthesia will be of enormous value in allowing the operator to discover the true pathology and so avoid the disappointment of the fruitless exploration that is only too likely if general anæsthesia be employed.

I am grateful to Prof. Seymour Barling who first interested me in this subject, for his practical help and advice and for permission to study his cases, to Prof A W Sheen for his encouragement and the provision of facilities for studying the subject; to Mr. Ian Fraser and Mr. F. A. R Stammers for most helpful communications; and to Mr H C. Edwards who kindly allowed me to use Figs. 4 and 6

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ON THE SYNERGISM BETWEEN ŒSTRIN AND PITUITRIN

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(From the National Institute for Medical Research, London)

It is still uncertain how parturition is induced at the termination of pregnancy. Various experiments and clinical observations, however, tend to show that the process requires a synergism between œstrin and the hormone of the posterior lobe of the pituitary body (pituitrin or, possibly, oxytocin).

Brouha and Simonnet [1] in 1926 thought that they were able to demonstrate such a synergism, because they had noticed that the uterus of female guinea-pigs, which had for some time been treated with œstrin, responded more readily to pituitrin than the uterus of untreated control animals. However, even if the guinea-pigs had not been treated with œstrin, they would have presented great individual differences of sensibility to pituitrin In order to verify their conclusion, Brouha and Simonnet ought to have compared a great number of injected animals with non-injected ones

It would therefore be a considerable progress if the same uterus could be utilised for the same experiment Such experiments were performed and published by Bourne and Burn [2] in 1928 The basis of their experiments were some clinical observations made by Bourne (not published) according to which the uterus responds more readily to pituitrin if œstrin is injected subcutaneously during parturition Bourne and Burn carried out their experiments by way of alternate addition of pituitrin and water soluble œstrin to the suspension in which the guinea pig uterus was placed From their results they conclude that there is a synergism between œstrin and pituitrin I was personally informed, however, by Prof Burn that this work is not quite unobjectionable, since the œstrin available in 1928 was no pure product and contained several concomitant substances

Lately Genell[3] has reported that in case of primary inertia uterine contractions may be induced by intramuscular or subcutaneous injections of fairly large doses of œstrin (from 4000 to 10,000 international units)

Clark, Knaus, and Parkes[4] in 1925 showed that rats present great variations with regard to spontaneous uterine movements These movements, which are fairly rapid during œstrus, become much slower during diœstrus These authors therefore presumed that the organism of the animal contains more œstrin during œstrus than during diœstrus

Parkes[5] in 1930 demonstrated that, in pregnant mice, an abortion can be provoked at any moment of the last half of gestation by injection of pituitrin (oxytocin+vasopressin) On the other hand, oxytocin alone will but rarely bring about an abortion However, if pregnant mice previously are treated with œstrin, oxytocin will be able to provoke abortion just as frequently as pituitrin

Robson[6] in 1933 showed that the uterus of rabbits during the first three weeks of gestation is very resistant to oxytocin, whereas its sensibility to this hormone increases considerably in the course of the fourth week, reaching its maximum during parturition itself This also applies to women[7] Finally, Robson[8] demonstrated that the injection of œstrin into ovariotomised and non ovariotomised pubescent rabbits gives rise to an increased sensibility of the uterus to oxytocin in vitro and, besides, to an acceleration of the spontaneous rhythmic activity.

In the present note I endeavour to show that, in infantile guinea pigs, the injection of œstrin gives rise to increased sensibility of the uterus to pituitrin in vitro

Exp. No	Weight of animal (g)	Effective minimum dose of pituitrin		Œstrin administered
		Before œstrin	After œstrin	
III	250	0·0002 U	0·00004 U	3000 I U
IV	190	0·003 U	0·001 U	3000 I U
V	200	0·001 U	0·0003 U	3000 I U
VII	150	0·09 U	0·009 U	3000 I U
		Control experiments		
A	220	0·0007 U	0·0007 U	0
B	200	0·003 U	0·003 U	0
VI	180	0·001 U	0·001 U	0

Material and technique—Infantile female guinea pigs weighing from 150 to 250 g are employed Under ether narcosis and application of sterile precautions one of the uterine horns is carefully removed through a long, oblique cut from the flank downward to the anterior side of the abdomen The horn is immediately placed into a pituitrin bath, as indicated by Burn and Dale[9] In order to prevent too vigorous spontaneous contractions, a weight is attached to the writing arm of the apparatus Both the size and the place of the weight are noted in every individual case

Next, pituitrin is added to the Ringer suspension and the smallest dose of pituitrin able to produce a visible contraction is determined Twenty four hours after the operation the animal receives an injection of 3000 I U œstrin dissolved in olive oil * After the lapse of further 24 hours the animal is killed and the other uterine horn is removed and placed into the pituitrin bath under perfectly similar arrangements—i e, at the same temperature and with the same weight attached to the same place of the writing arm Again the smallest amount of pituitrin which gives rise to a visible contraction of the uterus is determined

Seven experiments were performed altogether, and three of them were control experiments—that is to say, the animals received *no œstrin on the day after operation* (Two of the control experiments, marked A and B, were performed in Copenhagen) From the accompanying Table it is evident that an increase of the sensibility to pituitrin in vitro was detected in all four cases In the three control experiments, identical doses were administered both prior and subsequent to partial hysterectomy

I would like to express my thanks to the Medical Research Council and to Sir Henry Dale, F R S, for the hospitality of the National Institute for Medical Research, and to Mr A S Parkes, D Sc, F R S, in whose laboratories the work was done

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* The œstrin administered was of the Ovex Leo brand manufactured by Levens Kemiske Fabrik, Copenhagen, to which firm I am indebted for kindly placing both Ovex Leo and [illegible] Leo at my disposal

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HÆMATURIA IN APPENDICITIS

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RELATIVELY little has been written about hæmaturia in appendicitis, but I have managed to find records of some 50 cases, many of the papers being more in the nature of annotations than case reports. Seelig[1] in 1908 described three cases and classified the causes as follows —

1 Toxic nephritis, in which the hæmaturia was caused by the circulation in the blood stream of toxins produced by an acute appendicitis.

2 Direct involvement of the kidney or renal pelvis by an inflamed appendix lying in the retrocæcal position

3 Direct involvement of the ureter

4 Direct involvement of the bladder either by an inflamed appendix or by an appendix abscess

This classification is obviously sound apart from Cause 1 Doubt has been thrown upon this suggestion in the past, notably by Gottlieb[2] in 1924, who concluded that an ætiological relationship between appendicitis and nephritis was by no means proven Zaffagnini,[3] on the other hand, in two of his six cases, considered the cause of the hæmaturia to be a toxic nephritis due to the appendicular condition It is undoubtedly difficult to be certain that a toxic nephritis is due to an acute appendicitis *present in* the same patient

RELATION TO NEPHRITIS

In many of the published cases such as the two reported by Wolff,[4] the hæmaturia developed some time after the operation of appendicectomy, and hence it is problematical as to whether the appendicitis was or was not, an ætiological factor It seems much more probable that acute appendicitis is sometimes a symptom of a general disease of which an acute nephritis may also be a symptom or complication As an example of this the following case may be of some interest.

CASE 1 —A single woman, aged 56, was admitted to St. George's Hospital on April 24th, 1934. She gave a history of severe sore-throat, headache, and loss of voice several days previously and of severe right-sided lower abdominal pain and vomiting for 24 hours. On examination there was some redness and vesiculation of the throat, enlarged tender glands in the neck on both sides, and marked tenderness and rigidity in the right iliac fossa The temperature and pulse were both slightly raised The voice was husky. Under Avertin and gas-and-oxygen anæsthesia the appendix was removed in a condition of acute inflammation The abdomen was then closed After the operation there was an exacerbation of the laryngitis and tonsillitis and a hæmolytic streptococcus was discovered in almost pure culture from a throat swab. Four days later hæmaturia and albuminuria occurred Microscopy of the urine revealed red and white blood corpuscles, no organisms, but many granular and cellular casts. Cultures were sterile Under treatment the condition has slowly cleared up and the patient now passes only a trace of albumin and no blood.

This case is surely one in which the nephritis, and possibly also the appendicitis, were complications of a streptococcal infection of the throat; and it is reasonable to suppose that some of the cases of so-called toxic nephritis complicating appendicitis might be of a similar nature. There is thus little doubt that the production of toxic nephritis by an acute appendicitis is still unproven, and it is only by the publication of further cases with complete records that the truth is likely to appear.

LONG-STANDING SYMPTOMS

Hæmaturia may apparently occur at any age and in association with acute or chronic appendicitis In the chronic cases the cause is usually the adherence of the inflamed appendix either to the kidney or to the ureter In Hammersley's [5] case the appendix was densely adherent to the lower pole of the right kidney, whilst in that reported by Ashurst [6] the right ureter was involved

The symptomatology in the chronic cases is of considerable interest, since pathological conditions have frequently been diagnosed in the genito-urinary, rather than in the alimentary, tract. The symptoms may be those of a typical renal or ureteric colic (Ashurst, Speed), associated with hæmaturia, and it is difficult, indeed, to see how any other diagnosis could be made than that of genito-urinary disease In one case the diagnosis of ureteric colic was made, and apparently confirmed by the presence of an opacity lying in the line of the ureter on the right side in an X ray plate At operation the ureter was found to be normal apart from the fact that it was adherent to a chronically inflamed appendix in the lumen of which was lying a stercolith.

Bleeding may continue in the chronic cases over long periods of time, even up to four years (Sciaky [7]), but in the majority of the cases it is of short duration. It may occur either in the early stages before appendicitis be diagnosed (Corner [8]), with the onset of symptoms and signs of acute appendicitis as in the case reported below, or it may develop subsequently as in one mentioned by Cosens [9] and in 12 of the 35 cases collected by Gottlieb In these latter, as I have already mentioned, the ætiology is relatively unknown.

HÆMATURIA IN ACUTE ILLNESS

It is in those cases where the hæmaturia occurs in association with the signs and symptoms otherwise suggestive of acute appendicitis that confusion is likely to arise A diagnosis of pyelitis or urinary colic might well be made in the presence of red blood-cells in the urine and the true condition of acute appendicitis be overlooked. In the majority of the cases reported where the hæmaturia and symptomatology of appendicitis coincided the former was due to the presence of inflammatory changes around either kidney, ureter, or bladder Those inflammatory changes were usually advanced and extensive as in cases reported by Ascoli,[10] Zaffagnini, Sciaky, and others Hence it is a matter of some importance that the correct diagnosis be made if the patient is not to suffer unduly from delay in treatment

In the following case the hæmaturia was not noticed, may not even have occurred before admission to hospital, and was only discovered during the routine examination of the urine

CASE 2 *History* —A married woman, aged 21, complained that some 48 hours previously she had been seized with sudden, severe, generalised abdominal pain and vomiting The pain gradually shifted and settled in the right lower abdomen, where it had remained since She had vomited several times since the onset and the bowels were opened regularly until the morning of the day of admission, when there had been no action. The patient stated that micturition had been normal in every way during the preceding few days and she had noticed no pain, frequency, or blood The periods had always been regular, the last period having terminated 14 days before the onset of symptoms There was no history of any previous similar attack

Examination —The face was rather flushed, the tongue white and dry, and movement of the abdomen limited over the lower half during respiration There was tenderness all over the lower abdomen which was most obvious in the right iliac fossa There was no tenderness in the right kidney region Rectal examination revealed acute tenderness high up on the right side but no definite mass could be felt. Vaginal examination showed nothing abnormal. The temperature was 102 4° F. and the pulse rate 116, respiration being normal.

The urine was bright red, and, as bleeding of vaginal origin was suspected, a catheter specimen was taken, only to reveal the same contamination with blood. Microscopic examination of the urine showed large numbers of red blood corpuscles, occasional white blood cells, and a very few coliform bacilli There were no casts, crystals, or other organisms seen in a fairly extensive search. Examination of the blood showed a leucocytosis of 36,000, mainly polymorphonuclear leucocytes General examination of the patient discovered no abnormality in the heart, lungs, or central nervous system

Apart from the hæmaturia the case appeared to be a straightforward one of perforated appendicitis, and the abdomen was accordingly opened with the provisional diagnosis of acute appendicitis with adhesion of the appendix to the ureter. It was thought that the bladder could scarcely be involved in the absence of any disturbance of micturition and unlikely that the appendix was lying in the retrocæcal position and adherent to the kidney, in view of the lack of tenderness in the right loin

At *operation*, which was performed under general anæsthesia, a long appendix was discovered running downwards and inwards crossing the bifurcation of the common iliac artery and ending with its tip just in contact with the upper surface of the bladder The appendix was gangrenous in its middle third, that being the portion in contact with the ureter as it crossed the bifurcation of the common iliac artery Over its whole course the appendix was adherent to the structures lying deep to it by a mass of plastic exudate. There was free purulent fluid in the lower part of the peritoneal cavity and foul pus was found lying in the right paracolic gutter. Without disturbing the cæcum and after packing-off the intestines above, the appendix was removed as carefully as possible in order not to spread the infection to other parts of the peritoneal cavity A strip of rubber dam was introduced down to the site of the gangrenous portion of the appendix and the abdomen was closed, the fatty tissues of the abdominal wall being drained with a small rubber slip

Subsequent course—The patient made a relatively uninterrupted recovery after operation and the incision was completely healed at the end of three weeks The urine was completely free of blood by the third day after operation to macroscopic tests Microscopic examination did show a few red blood cells and occasional coliform bacilli ten days after operation, but at no period was there any evidence of true urinary infection as evidenced by pain or frequency

A month after operation the blood urea was 22 mg per 100 c cm, the urine urea 14 g in 1500 c cm (at rest in bed), and a Uroselectan radiogram showed nothing abnormal in the region of the right ureter Cystoscopy a week later showed a normal efflux from both ureteric orifices and a healthy vesical mucosa The excretion of indigo-carmine was normal in time and amount

The patient was seen two months after the original operation and was in apparently perfect health

It seems unquestionable that in this particular case the site of bleeding was the ureter, the only point worth discussing being the cause of the bleeding It may be said to be due to congestion of the veins of the ureter by the pressure of inflammatory exudate outside, or to the occurrence of a true inflammatory ureteritis, but in view of the absence of urinary symptoms throughout, it seems probable that the former is the correct hypothesis

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THE RECENT WAVE OF STREPTOCOCCAL INFECTION

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WHEN considering the incidence of any particular ase there is a tendency to be guided over much personal impression which cannot always be bstantiated by statistical analysis During 1933 d 1934 we have had the impression and have quently heard the opinion expressed by others, at there has been a definite increase in the incidence streptococcal infections in general and of acute eumatism, mastoiditis and throat infection in ticular These affections appeared to be specially evalent during the summer and autumn of 1933 d the early part of the present year Also during is time it is known that there occurred in Edinburgh an exceptionally large epidemic of scarlet fever. The purpose of this paper is to attempt, by quoting figures to arrive at the truth regarding both the actual incidence and the comparative incidence of certain streptococcal diseases and to investigate the validity of personal impressions

In order to do this we obtained from the public health department the annual number of scarlet fever notifications in the Edinburgh area from January, 1929, to March, 1934, inclusive Further the number of cases of acute rheumatic infection admitted to the Royal Infirmary and the Royal Hospital for Sick Children from the Edinburgh area during this period has been determined and the same has been done with cases of acute mastoiditis admitted to the ear and throat department of the Royal Infirmary under the charge of Dr J S Fraser Regarding the latter cases, it must be stated that it is only those which were proved to be due to the hæmolytic streptococcus which have been included, and all non streptococcal cases are eliminated The incidence of notified erysipelas has also been determined for the same period These diseases have been selected, since it is comparatively simple to obtain accurate figures regarding their incidence, at any rate amongst the hospital population It would have been interesting also to have included cases of streptococcal throat infection, but as a high proportion of these never reach the wards of a hospital it would be well-nigh impossible to obtain figures representative of their true incidence The following Table shows the number of cases of the various streptococcal infections during the last five years —

	Scarlet fever	Acute rheumatism	Mastoiditis	Erysipelas
1929	1164	118	16	338
1930	1278	136	15	339
1931	647	100	16	280
1932	1080	118	20	340
1933	4551	170	35	382
1934*	1128	79	14	145

* First quarter

The figures in this Table are also shown graphically for ease of comparison, and for the purpose of control the incidence of diphtheria is shown for the same five year period (see Figure) The most striking feature about the graph is the rise occurring during the year 1933, this rise being common to scarlet fever, acute rheumatism, and acute mastoiditis and to a lesser degree, to erysipelas, whereas the diphtheria incidence appears to run a completely independent course There is also a high incidence of all four conditions during the first quarter of 1934 It may be argued that the number of cases of acute rheumatism and acute mastoiditis is too small to enable definite conclusions to be drawn, but the strikingly increased incidence of both these diseases occurring coincidently with the large scarlet fever epidemic, seems at least to be significant Further, it must be remembered that the rheumatism figures and mastoid figures represent only a proportion of the total cases occurring in the city, since they do not include cases of these diseases occurring in the non hospital population The scarlet fever figures on the other hand may be said to represent the total cases occurring in all grades of society for the area under consideration

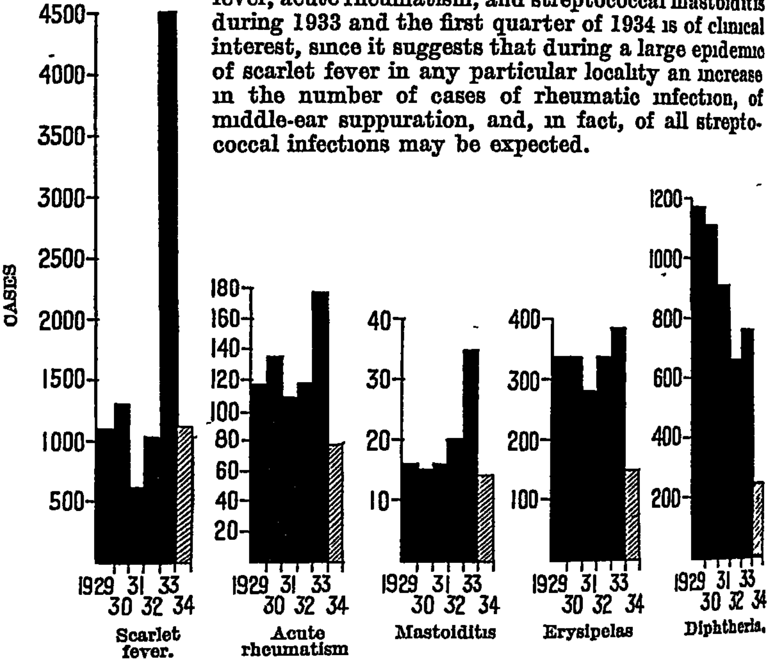
DISCUSSION

The result of this investigation seems to confirm the personal opinions which have been expressed regarding the increased incidence during 1933 and

1934 in the Edinburgh district, of acute rheumatic infection and acute mastoiditis. This is of particular interest in view of the exceptionally large epidemic of scarlet fever which occurred during this time It might be expected that if these three diseases are due to infection with a hæmolytic streptococcus their yearly incidence would run a comparatively similar course and the figures obtained in this analysis show some degree of parallelism from year to year. This is most evident when the incidence of scarlet fever and acute rheumatism is compared. We would make it quite clear that the cases of rheumatism and mastoiditis referred to above had no apparent connexion with scarlet fever, and all cases of arthritis and mastoiditis arising as a direct complication of this disease are automatically included in the scarlet fever figures and not under the heading of acute rheumatism or mastoiditis A point of interest arises in connexion with this, however, since it is possible that a proportion of the cases included under rheumatism or mastoiditis may have been in reality cases of missed scarlet fever. If the rash were fleeting and the general symptoms very mild, then it is possible that some complication such as acute arthritis or middle-ear suppuration may have been the first indication of the disease We would add, however, that we have endeavoured, so far as is possible, to overcome this fallacy, and it is probable that the great majority of the cases, both of acute rheumatism and acute mastoiditis, were unassociated with scarlet fever It would seem that during the period under discussion some factor or factors have been acting either to increase the virulence of the *Streptococcus hæmolyticus* or to lower individual resistance to this organism. This surmise is interesting when it is remembered that the year 1933 was unusually warm and dry, and when the high sunshine record might have been expected to increase the resistance of the individual to disease. On the other hand, the incidence of scarlet fever in the city of Edinburgh was considerably below the average during the five-year period 1928–32, and one might assume that the index of susceptibility of the population in the year 1933 was unusually high. By the susceptibility index we mean the ratio of individuals who have not suffered from scarlet fever to the general population

The influence of climatic conditions on the incidence of disease constitutes a problem of great complexity, since so many factors have to be taken into consideration before it is possible to draw accurate conclusions In view of the high sunshine and low rainfall experienced during 1933 and the first quarter of 1934, it was thought possible that the striking wave of streptococcal infection in the Edinburgh area might be explained, to some extent at any rate, by the rather exceptional climatic conditions If the streptococcus be dust-borne then it seems reasonable to suppose that a serious, long-continued drought, such as that experienced during the past two years, may have been a factor in facilitating the spread of streptococcal infection. It is possible that at a period when the susceptibility index is high the occurrence of an unusually prolonged spell of dry weather may have some significance as a causative factor in precipitating an epidemic of scarlet fever and raising the incidence of other streptococcal infections.

The high incidence revealed in the graph of scarlet fever, acute rheumatism, and streptococcal mastoiditis during 1933 and the first quarter of 1934 is of clinical interest, since it suggests that during a large epidemic of scarlet fever in any particular locality an increase in the number of cases of rheumatic infection, of middle-ear suppuration, and, in fact, of all streptococcal infections may be expected.



Graph showing yearly incidence of the various infections

SUMMARY

The incidence of notified scarlet fever and erysipelas and hospital cases of acute rheumatism and acute mastoiditis in the city of Edinburgh is shown for a five-year period. It is evident that during the year 1933 and the first quarter of 1934 a marked increase in the number of cases of acute rheumatism and acute streptococcal mastoiditis occurred coincidently with an exceptionally large epidemic of scarlet fever. It is suggested that the effect of an unusually hot, dry season on a highly susceptible community may have been a factor in producing this wave of streptococcal infection.

We wish to record our thanks to Dr. J. S. Fraser for helpful advice in connexion with this paper.

WEYMOUTH EYE INFIRMARY —Lady Ilchester has opened the new Weymouth and Dorset County Royal Infirmary The work there has become increasingly heavy during the last few years, but it is now hoped that the new building may meet the needs of the county for the next 30 or 40 years

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.—Two gifts towards the rebuilding of this hospital were announced by the Princess Royal at a Mansion House meeting on Dec. 11th Mr. Charles Johnson, a member of the committee of management, has given £10,000 to provide a medical ward to be called after the Princess Royal, and another donation of £50,000, payable in seven equal annual instalments, was promised by Lieut.-Colonel Stanley Cohen, vice-chairman of the hospital The scheme of reconstruction was described in our issue of Nov 24th, p 1900

Clinical and Laboratory Notes

AN ANALYSIS OF 1758 SCHICK TESTS IN NIGERIAN NATIVES

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Diphtheria does not hold an important place among the diseases of Southern Nigeria, being almost unknown in the clinical type common to the more temperate regions The disease has been recorded from Kaduna (Northern Nigeria), from the Gold Coast, and from Sierra Leone Although we have seen no diphtheria in Lagos, severe cases of sore throat, some with patchy ill defined membranous formation, have been encountered Swabs taken from a small number (20) of them have been cultivated on blood-agar plates containing potassium tellurite The composition of this media was similar to that used by Horgan [1] in Khartoum In three instances a Gram positive bacillus was obtained which gave the sugar reactions of *Corynebacterium diphtheriæ* (acid with glucose and galactose, no action with saccharose) None of the strains isolated showed any virulence for guinea pigs Through the kindness of Prof J C G Ledingham, one strain was examined at the Lister Institute, London, and was reported as being of the mitis type (avirulent) of diphtheria bacilli.

The advisability of investigating the relative immunity of Nigerian natives was considered, and Dr R A O'Brien, of the Wellcome Research Laboratories, kindly provided sufficient Schick toxin to make practicable a preliminary examination of approximately 300 Africans The results were encouraging and it was decided to continue the investigation on a more extensive scale A sample of toxin, kept under similar conditions to that used in the tests, was returned to Dr O'Brien at his request and on estimation was found to have suffered no diminution in potency

In all, 1758 Africans were tested, using the standard method of double inoculation (toxin in left arm control in right) It was interesting to note the ease with which the results could be read in pigmented skins The positive reactions were well marked and consisted in most instances of a distinctive alteration in the colour and appearance of the skin, amounting to a definite flush in many cases Usually the site was raised above the surrounding skin and frequently the area was papular and finely wrinkled Desquamation sometimes followed After several hundred reactions had been examined it was found that the results were clearest and therefore easiest to read about the fifth day following inoculation and all further readings were made accordingly

Of the 1753 tests, 1093 were in males and 660 in females The total number of positive results (non immunes) obtained was 337 (151 males and 186 females). These figures represent 19 per cent of all cases, 13 7 per cent of males and 28 6 per cent of females. The relation of age and sex to the number of positive results is shown in the accompanying Table

From these figures it appears that about 30 per cent of the natives examined in Southern Nigeria are Schick positive during the first year of life For ages up to ten years approximately 20 per cent are susceptible (Schick positive) and from that age onwards almost complete immunity seems to prevail

Age.	Tests	Males	Per cent positive	Females	Per cent. positive	Total per cent positive
1 to 12 months	46	46	32 6	0	—	32 6
1 to 10 years	1409	786	15 6	623	30 6	21 7
10 to 15 ,,	248	211	0 9	37	8 1	2·0
15 to 20 ,,	50	50	2 0	0	0	2·0

It is of interest to compare the results obtain in the present series of tests with some of those obtained by other workers in both non tropical, and tropical areas Topley [2] quotes Zingher's figures from which the following have been taken

> For age groups of 6 to 12 months the percentage of positive Schick reactions varies from 56 6 to 91 1 For the age group of 1 to 3 years the percentage is 83 2 The rate then continues to diminish until for the age group 9 to 10 the percentage of positive Schick reactions is 32 2 For the age groups of 10 to 15 years the percentage has become further diminished and varies from 29 3 to 19 7

Prof J W Bigger, as a result of Schick tests performed on medical students in Dublin University over a number of years, informs us that 70 per cent of positive findings is usual Saunders [3] comments upon the prevalence of diphtheria in Cork city and in a series of Schick tests he obtained a percentage of 28 9 of positives for those aged ten and over

As regards the figures obtained in other tropical areas Robertson,[4] in Malaya, obtained 30 5 per cent of positive reactions in children at ages varying from five to ten years and 34 5 per cent in those aged ten to fifteen Fischer [5] in East Africa, obtained only three positive results in 222 tests carried out on children aged seven to thirteen

It is apparent then that the percentage of non-immunes (positive Schick-reactors) of the natives of Southern Nigeria is much lower than that prevailing in temperate countries Compared with other tropical countries the results obtained in Lagos (Southern Nigeria) are somewhat similar to those found in East Africa, but the rate of Schick-positive reactors is much lower than that quoted for Malaya where diphtheria is prevalent The higher non-immune rate in girls is demonstrated by the present series of tests and suggests that they are roughly twice as susceptible as boys.

Summary.—In Lagos 1454 native children under the age of ten showed Schick positive percentages of from 15 to 30, while 298 over ten yielded only 2 per cent Though clinical diphtheria is almost unknown, natural immunisation by subclinical infection appears to be active

We are indebted to the Director of Education for his kind permission to test the children attending the Government schools, also to the heads of the various religious bodies for their kind coöperation in this work, and finally to the director of the Medical and Health Service for his permission to publish

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CHOREA TREATED BY INJECTION OF DISTILLED WATER

BY G. ARBOUR STEPHENS, M.D. Lond

CARDIOLOGIST TO KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION

THOSE who have had experience in the treatment of chorea know how difficult it is to deal with patients whose movements are so excessive as to interfere with sleep For severe spasms it has been the custom to rely on bromide and chloral, which however need to be administered with great care to avoid the subsequent mental disturbance Other drugs such as aspirin and arsenic have hardly any effect in cases with severe spasms and even the good effects of chloroform soon pass off. The following case is given in order to show another means of subduing successfully the excessive spasm—namely, by means of the subcutaneous injection of distilled water

A girl of 14 was admitted to hospital after suffering for a fortnight at home On admission she was placed as usual on calcium lactate and parathyroid in the large dose of half a grain of the dried gland. These drugs usually have a good effect In this case, however, the spasms were so excessive as to prevent sleep as well as the use of her voice. At my suggestion she was then given subcutaneous injections of distilled water, 10 c.cm. daily, and two nights later she was able to sleep fairly comfortably. This improvement has been maintained and at the end of a fortnight, during which she has had altogether eight injections, she was able to sit up in bed and feed herself with minced meat, using a spoon. My experience of the soothing effects following the use of distilled water has been highly satisfactory too in other cases in which the movements have been severe

How is one to explain the effect of distilled water? When I first drew attention to its value (Brit Med. Jour, 1913, i, 706) I pointed out that distilled water has a high surface tension and I suggested that the introduction of such a liquid has a modifying effect on the surface tension of all the cells with which it comes in contact Modification of a cell's surface tension tends to modify its metabolism and secretion.

ANTIMONY DERMATITIS TREATED WITH SODIUM THIOSULPHATE

BY A. FAKHRY, M B Cairo

PRINCIPAL MEDICAL OFFICER, BILHARZIA AND ANKYLOSTOMA HOSPITAL, CAIRO (SHOÚBRA), EGYPT

As long ago as 1929 I reported to the department of public health of Egypt two types of tartar emetic rash: one a papular type which is fairly common, and the other a scaly type which is rather rare The case here reported shows that the rash may follow administration of Fouadin (sodium antimony pyrocatechin-disulphonate) also, and that it is due to susceptibility to antimony preparations

The patient is a girl aged 22, weighing 56 kg, with a *Schistosoma hæmatobium* infection of the urinary tract Clinical examination showed no contra-indication to fouadin treatment, and she was given the first injection of 1 25 c cm. on July 12th On the 14th she had a fine papular rash, not very well defined but very slightly raised above the surface of the skin It was confined to the back of the hands and forearms, the sides of the neck, and upper part of the chest There was also an abnormal flush on the cheeks. The temperature was 37° C The patient complained of generalised pain all over the body, and severe itching of the affected parts On July 14th she was given the second injection of 2 75 c cm, and on the next day the rash had become more apparent, with a wider distribution. On July 17th the eruption was markedly papular, covering the whole body, but less obvious on the thighs. The face was puffy and covered with a minute papular eruption The rash on the hands and forearms was characteristic: it consisted of hard shotty pearl-like papules, raised above the surface of the surrounding skin. Some of them were confluent, forming larger papules. The palms were also affected, owing to the tenseness of the palmar fascia the papules were not much raised, but they appeared white and felt shotty. The epitrochlear, the axillary, and the inguinal glands were slightly enlarged and their tenderness was one of the main complaints of the patient. There was intolerable itching and hot sensation of her skin, so much so that she tolerated her clothes with difficulty. There was a definite circumoral pallor somewhat resembling that of scarlet fever. The mouth and throat were normal, and there was an irritable dry cough, but the chest was clear.

On going into the history more carefully the patient produced the very interesting information that a year previously she had been given tartar emetic injections in another "bilharzia" hospital, and had begun to develop a similar rash after the second injection At that time the rash started on the dorsum of the feet instead of the dorsum of the hands. Administration of tartar emetic was stopped

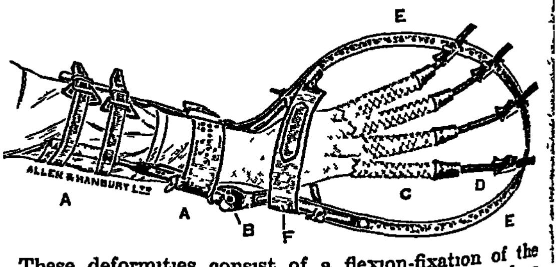
In the treatment of this rather severe case I tried sodium thiosulphate used as in arsenobenzol dermatitis The use of fouadin was discontinued, and on July 17th she was given an intravenous injection of 10 c cm. of 10 per cent sodium thiosulphate solution On the 18th the puffiness of the face disappeared and the rash on the face, abdomen, and back was only slightly apparent, that on the hands and forearms diminished considerably, but remained the most conspicuous part. The glands were still slightly enlarged, but less tender. The patient was much better On the 18th she was given the second injection of sodium thiosulphate. She did not attend again until July 24th because she felt better, and by that time she was completely cured.

Antimony dermatitis is common, but it is usually very mild and needs no treatment. The rapid effect of sodium thiosulphate in the above case is worth recording.

NEW INVENTIONS

CORRECTION APPLIANCE FOR FINGERS AND WRIST

THE apparatus here depicted is a modification of one designed by Dr Gunnar Kahlmeter of Stockholm, and fully described by him in *Acta Rheumatologica* (September, 1933) Its purpose is to correct the deformities characteristic of atrophic arthritis, of either primary (rheumatoid) or secondary (infective) forms, which occur in the wrist and hands



These deformities consist of a flexion-fixation of the wrist, and of the metacarpo-phalangeal joints with ulnar deviation of the fingers It is important that correction should be gradual, but this is difficult to obtain by ordinary splinting because the individual joints may be involved in varying degree and must therefore be treated separately. On the other hand, forcible manipulation of contractures in atrophic arthritis is contra indicated on the following grounds (1) Not only are the intra and peri articular adhesions in these cases extremely firm, but the bones are decalcified, and there is a consequent risk of fracture (2) Considerable reaction follows manipulation of joints the subject of atrophic arthritis, resulting in pain and increased stiffness (3) Improvement in alignment obtained by force is always gained at the expense of loss of strength A misshapen but strong hand is more useful than a straight but weakened one

This apparatus is held by the forearm, both below the elbow and above the wrist, by wide leather straps (A) Gradual extension of the wrist is obtained by means of the rachet screw (B) The fingers are held in extension by plaited finger stalls (C) which can be easily applied, and are stretched by means of rubber tubes (D) The latter are fitted with hooks which can be inserted into a series of slots in the aluminium frame (E) In this way the fingers can gradually be pulled towards the radial side, thus correcting the ulnar deviation Pressure is meanwhile maintained on the metacarpo phalangeal joints by means of a padded strap (F) in order to correct the flexion fixation of these joints The apparatus is light and can be held in any position It should be applied daily, at first for short periods, according to the tolerance of the patient Later the duration of application can be increased, and the apparatus adjusted to meet the response of the individual joints

FRANK HOWITT, C V O , M D Camb

MEDICAL SOCIETIES

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY

THIS society met at Sheffield on Nov 23rd, with Prof DANIEL DOUGAL (Manchester) the president, in the chair

Gynæcological Cases

The PRESIDENT described a case of malignant *ovarian tumour* removed five years after radium-induced menopause

He operated on the patient in 1929, when she was 41, for excessive and frequent loss without uterine enlargement, 100 mg of radium was inserted into the uterus for 22 hours and a cure resulted She was quite well till this year, when she complained of discomfort and swelling in the lower abdomen At operation a carcinoma of the left ovary was found, and panhysterectomy with removal of both appendages was done Microscopical examination of the uterus showed a single layer of epithelium and fibrosis The growth had obviously no relation to the previous treatment, but it was something of a shock to meet with a carcinoma developing in a patient who, a few years ago, would have undergone panhysterectomy with removal of her ovaries for her first complaint of excessive loss

Mr ST GEORGE WILSON (Liverpool) reported a case of *angular pregnancy*

The patient, aged 26, was pregnant for the third time Her first pregnancy was terminated for hyperemesis, the second went to full term, after trouble with vomiting in the early months Her last menstrual period was on Sept 1st, 1934, and vomiting began on Oct 7th She was admitted to hospital on Oct 11th, albumin and acetone were found in the urine, and the blood pressure was 110/60 On bimanual examination the uterus was retroposed and bulky, with a soft bulge to the left, the main body [illegible] normal in shape and consistency, the size being that of an eight weeks' pregnancy The uterus was replaced and a ring pessary inserted, treatment with daily enemata, rectal salines with glucose, and insulin was begun On Oct 25th the pulse rate rose to 120 and slight jaundice was present Besides albumin and acetone the urine contained excess of urobilin, many organisms and hyaline and granular casts Mr Wilson decided to induce abortion Lipiodol was injected into the uterus under spinal anæsthesia and X ray films were taken at different stages This did not start abortion and so 24 hours later a No 10 [illegible] was inserted without an anæsthetic Abortion was complete after 48 hours Vomiting occurred for a day or two after this and then stopped The patient was discharged on Nov 15th Mr Wilson expressed the opinion that the case was one of angular pregnancy, which was the cause of the hyperemesis

Mr J I STACEY (Sheffield) described a *pancreatic cyst* from which 46 pints of brownish fluid containing cholesterol were aspirated, and also an *adenomyoma* of the recto vaginal septum complicating a two months' pregnancy in a nullipara aged 39, married for 13 years He then went on to report five cases of *epithelioma of the vulva*, treated in the first instance with radium At intervals varying from three months to two years after the radium treatment excision of the vulva with the diathermy knife had been done, owing to extension of the growth or severe local pain or both The radium dosage in specified cases was applied in the form of 25 needles, each of 3 mg, for 72 hours, to the ulcer and *regional glands* Sections taken after the radical operation showed *radium burns* in two cases, and epithelioma was present in all Mr Stacey had been impressed for some time by the ineffectiveness of radium treatment for vulval carcinoma He found that when the ulcer failed to heal, extension was rapid and radium burns caused such intense pain that local excision was soon demanded He suggested that a judicious *combination of radium* and excision at the start, with the *addition of deep* X rays, was perhaps the solution of the *problem*

ROYAL ACADEMY OF MEDICINE IN IRELAND

AT a meeting of the section of surgery on Nov 23rd, with Mr SETON PRINGLE, the president, in the chair, a paper on

Intratracheal Anæsthesia

was read by Dr R. W SHAW The method, he said, was first practised about the year 1880, the apparatus used being a modification of that designed by Fell and O'Dwyer for intubation in *cases* of laryngeal diphtheria Its great advantage was that it permitted, for the first time, operative surgery in the thoracic cavity Improvement in technique continued between 1900 and 1910, but comparatively little progress was made during the late war Up to 1920 the method in use was known as "insufflation endotracheal anæsthesia," but in that year Rowbotham and Magill reported their experiences of what they termed "inhalation endotracheal anæsthesia" The essential difference between the two was that with insufflation the anæsthetic *vapour* was delivered into the trachea under pressure through a catheter not large enough to fill the *rima glottidis*, air was then expired round this catheter With the inhalation *technique* on the other hand the catheter used was of *such size* as to almost occlude the laryngeal cleft and the patient breathed in and out through the tube no pressure (or very low pressure) being used This method, which had now completely displaced the older method of insufflation, was simple to use, once skill and facility in the introduction of the catheter have been achieved The catheter might be introduced either through the nose or through the mouth If it was introduced through the nose the "blind" method described by Magill might be adopted, or a laryngoscope and special forceps might be necessary. If introduced through the mouth the catheter was always passed by direct vision with a laryngoscope. Any efficient gas-oxygen-ether machine could be used for maintenance of anæsthesia, and a minimum of ether was required The patient must first be anæsthetised by a gas-ether sequence, or basal anæsthesia combined with cocainisation of the larynx might be found more convenient. In an experience of over 40 cases Dr. Shaw had found the method entirely satisfactory, more especially for the surgery of the head and neck.

The PRESIDENT said that very often intratracheal anæsthesia was of the greatest possible service, but in his opinion it would never come into any very widespread use. He did not think it was required in cases of non-toxic goitre, and in these he personally had found the block method very satisfactory—Mr. R. ATKINSON STONEY referred to the amazing change in the giving of anæsthetics during the last 30 years; he felt, however, that in spite of the improvements there had also been an increase in the complications of anæsthesia —Mr T. J. D. LANE said he thought intratracheal anæsthesia was the best method in many cases.—Mr WILLIAM DOOLIN believed that in the last five years anæsthesia had developed even more quickly than surgery, and had developed in response to the surgeon He was convinced that intratracheal anæsthesia was the method of choice in facial surgery, especially in cases of cleft palate —Mr. ARTHUR CHANCE said he felt very confident regarding this method of anæsthesia It was of great value in thoracic surgery—Dr J. J FITZSIMONS said he had not used gas-and-oxygen intratracheally, but he had used McKesson's apparatus On getting the laryngoscope at the side of the mouth it was possible to see the epiglottis more easily.—Dr. T. G. WILSON spoke of the favourable results of intratracheal anæsthesia in laryngology He considered that the method was the safest and best for operations on the upper air-passages It dispensed with the nuisance of the nasopharyngeal plug

REVIEWS AND NOTICES OF BOOKS

Taylor's Principles and Practice of Medical Jurisprudence

Ninth edition. By Prof. SYDNEY SMITH, M D, F.R.C.P. With a complete revision of the legal aspect by W. G. COOK, LL D, barrister-at-law. London: J. and A Churchill Ltd. 1934 2 vols. Pp. 973 and 878. 63*s*.

Alfred Swaine Taylor first published in 1865 his "Principles and Practice of Medical Jurisprudence" So solid was his pioneer work that the ninth edition, now just published, is still largely based upon the data he collected long ago. His own forensic experiences were notable and varied He gave evidence on the toxicity and properties of strychnia in the case of Palmer of Rugeley, one of the earliest instances of its kind In R *v* Tawell he had to deal with the defence that prussic acid had entered the body through the pips of apples which the victim had eaten. Himself an almost ideal expert witness in his blend of caution and authority, he published advice on the methods of giving evidence which is as sound as ever. But naturally each fresh edition of his book has to take account of fresh developments of scientific knowledge Thus in toxicology the new edition includes the thiocyanate test for prussic acid, the electrolytic method (described by Young and Taylor) for determining mercury in tissues and body fluids, and fresh paragraphs on poisoning by alloys of mercury, aspirin, thymol, nembutal, thallium, aniline, cobalt, organic arsenical compounds, radio-active metals, and manganese Recent investigations of the pathology of French munition-workers during the late war are drawn upon for new knowledge of the effects of dinitro-phenol and dinitro-cresol There are notes on the danger of copper amalgams in dental work, the Newcastle case of the lemonade crystals in 1928, and the evidence offered against Mrs Hearne in 1931, where not only did the defence suggest that the body in the Cornish grave had been contaminated by the arsenical impregnation of the surrounding soil, but it was also matter of comment that at the exhumation jars containing viscera had been left uncovered in the graveyard. The chapters on poisons, of course, form but a part of these comprehensive volumes. There is a summary of the Aschheim-Zondek test, and the Friedman test is included in a brief discussion of biological criteria of pregnancy. There is fresh treatment of the attractive science of blood grouping which has already begun to demonstrate its medico legal value, even if its chief value at present is the cautious proof of a negative in certain disputes about paternity. What seems to be a new paragraph deals with powder-marks in firearm wounds, and there is naturally an account of Sir Bernard Spilsbury's evidence in Rouse's case On the legal side, if there has not yet been time to record the working of the Pharmacy and Poisons Act of 1933, several other recent enactments are noted—e g., the Mental Treatment Act of 1930 with its system of voluntary and temporary patients and its substituted clause (replacing Section 330 of the Lunacy Act) attempting to protect doctors from risks revealed in Harnett *v* Bond and similar proceedings, the Sentence of Death (Expectant Mothers) Act, the Infant Life (Preservation) Act.

In the field of litigation the general view of professional negligence stands where it was placed by Lord Hewart in R *v* Bateman in 1925, but the editors have rewritten the sentences about the surgeon's legal responsibility for a nurse's negligence, and reference is made to the Glasgow Royal Infirmary case (1933) where the House of Lords considered the distinction between matters of professional skill and purely administrative duties. Thomas *v* Jones is mentioned for the fresh light it throws on the validity of a will where the testator was mentally competent when giving his solicitor the necessary instructions but was of doubtful capacity at the moment of executing the will. The unpleasant case of R *v* Hare is shown to fill a gap in English forensic records of a woman's culpability for an indecent assault upon a male or another female The passages which deal with workmen's compensation seem to have undergone little revision, and a footnote reference to two recent decisions on miner's nystagmus is somewhat jejune The editors wisely do not pay too much attention to the dicta of Mr Justice Swift at Liverpool assizes last February at the trial of a lorry-driver accused of drunkenness In securing an acquittal the judge declared that an accused person cannot be medically examined without consent, and can give no consent unless sober The Home Office is understood not to have been greatly disturbed by these observations, but they might have placed the police in a serious dilemma, they appeared to suggest that the results of medical examination were either legally inadmissible evidence or else prima facie evidence of sobriety The very brief footnote in this connexion (on p 635 of Volume II) might perhaps have been linked up with the general advice on medical examination in Volume I Elsewhere indeed similar cross references would be helpful. A paragraph on p 542 of Volume I on lightning as an accident for purposes of workmen's compensation (partly based on Kelly's case for which no reference is given) might well have been transferred to, or somehow connected with, the fuller treatment of the matter on p 725 But on the whole there is little to criticise in the editing and indexing of a publication which is now better modernised than ever before

Taylor himself had no love of the system which brings in medical experts as witnesses for one side or the other in the law courts He looked forward to the day when they would act as independent assessors free of any taint of partisanship The "new procedure" in civil proceedings in the High Court is a step towards Taylor's ideal, though the step is being taken with some hesitation Be that as it may, in whatever capacity physicians or surgeons are concerned with any medico legal problem, they will scarcely fail to find help in this new edition of Taylor's classic work

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Acute Otitis and Mastoiditis in General Practice

By N Asherson, M A, M B, B S Lond, F R C S Eng, Assistant Surgeon, Central London Throat, Nose, and Ear Hospital London H K Lewis and Co, Ltd 1934 Pp 96 10*s* 6*d*

The suggestion made by Mr Asherson that struction about acute lesions of the ear is "tucked ray" in the special text books, is, we feel, hardly ar; in our experience they are usually given a ominent position Nevertheless, a small book onfined to the study of these diseases from the inical aspect may well be acceptable to the general actitioner but, indeed, a number of books of this rt have been published Much of the subject atter which forms this volume was originally put gether in the form of lectures to post graduates, nd this accounts for repetition which, while not ut of place in a series of lectures, becomes rather resome and confusing in a text book

Mr Asherson's treatment of his subject mostly llows orthodox lines. His differentiation between ppurative and non suppurative forms of acute otitis somewhat too sharply drawn, especially as he gards extremely acute pain as a common and aracteristic symptom of the latter condition, and e are unable to follow his distinction of a moist and dry appearance of the inflamed drum when no rforation has occurred He performs myringotomy by incision from above downwards, and advocates quent syringing in the after treatment He views ith rather too much complacency the persistence of a perforation of the drum as a sequel of acute itis although he does state that chronic otorrhœa ould never be allowed to occur, in consequence, he does not mention discharge persisting for more than a few weeks among the indications for antrotomy lthough it is now generally recognised that timely operation in this condition is of great value in preventing deafness, permanent perforation, and chronic otorrhœa For the rest, his teaching contains sound advice, especially useful is his insistence on the different importance of such symptoms as pain and tenderness before and after the establishment of free discharge. There is also in the book a good description of mastoid swellings in atypical positions, and of the peculiarities of acute otitis in childhood and in the acute fevers The operative treatment of mastoiditis and its complications is only briefly discussed, the book not being written with an eye on the operating surgeon, but a more detailed account of the treatment after operation would have been helpful A useful list of the causes of post-operative pyrexia is, however, supplied in which extraneous causes, frequently overlooked, such as otitis of the other ear, receive due mention

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1 Applied Eugenics

Revised edition By Paul Popenoe and Roswell Hill Johnson London Macmillan and Co, Ltd Pp 429 12*s* 6*d*

2 Constructive Eugenics and Rational Marriage

By Morris Siegel, M D Toronto McClelland and Stewart Ltd 1934 Pp 106 11*s*. 6*d*

1 The first of these books was originally published in 1918 and has been used in several American schools and universities as a college text-book It has passed into two editions in the Japanese language Its title is not altogether appropriate, for the book contains much more discussion of theory than of practice The first six of the 22 chapters deal with such topics as nature and nurture, modification of the genes, differences among men (this chapter includes a useful discussion of probability curves), the inheritance of these differences, natural selection, and the need for negative eugenics There follow three chapters on the application of eugenics in the spirit of the title which deal with selective segregation, sterilisation, and contraception The remaining chapters discuss such topics as the eugenic aspects of war, religion, and race, the improvement of reproductive selection and the eugenic implications of various social and economic measures The book concludes with a list of references (mostly to American books and papers), a glossary of terms employed and a list of problems of applied eugenics which might be useful to teachers as provocative subjects of essays Here are two "Which of the less common characteristics in yourself your brothers and your sisters can you find in some of your other relatives?" and "Discuss in detail the selective nature of deaths from automobile accidents"

There are two main problems of applied eugenics what qualities do we consider conducive to useful citizenship and therefore wish to see perpetuated; and by what measures do we propose to realise this end? The reader of this book will get a clear idea as to what qualities we do *not* want to see propagated, and he will learn what is being proposed by certain American eugenists with a view to reducing their incidence in future generations, but he may find his confidence in these schemes shaken because of the opposition raised by the authors to all schemes calculated to improve the conditions of the poor These, it is assumed, "tend" (a word much used by eugenists) to be below the average in respect of those qualities which conduce to useful citizenship Hence we should be careful not to improve their conditions in any way which is likely to promote their fertility. In Chapter 18 we find that the minimum wage, mothers' pensions, old age pensions, non-selective schemes for the improvement of housing, and the trade-union movement as it exists at present are condemned as dysgenic on grounds that certainly lack the scientific basis upon which rest the studies in hereditary differences presented in the first chapters.

2 Dr. Siegel's volume has a message, but unfortunately it is neither clear nor convincing. All the measures of negative eugenics which have hitherto been proposed he regards as, for practical purposes, valueless. In a chapter entitled Constructive Eugenics he advances his remedy. "It is," he says, "our sacred and solemn duty to our children and to future generations to work unceasingly until we find a remedy. There is only one remedy—Preparedness. Preparedness through education." The reader may well ask what principles should be inculcated in this education which the author does not, elsewhere in his book, condemn The book is written in the hortatory style of one who pleads a cause It contains several inaccuracies and misprints, and it eulogises the Jews, of whom it says that among those who lived in Russia 25 years ago there was no illiteracy, and that "their families were kept intact and clean."

Practical Methods in Biochemistry

By FREDERICK C. KOCH, Professor of Physiological Chemistry, University of Chicago. London. Baillière, Tindall and Cox. 1934. Pp. 282. 10*s*.

It is well known to observers of American methods of teaching medicine that very much more attention is paid to the course in practical biochemistry in their universities than is the case in this country. For this reason most American text-books on biochemistry are unsuitable for British medical schools, and this is particularly true of Prof. Koch's book. The exercises are all most clearly described, and there is no doubt that if the British medical student had the time to work through the book he would emerge with a very sound knowledge of the experimental methods of biochemistry; but this would be quite impossible with the existing curriculum. Another criticism from our standpoint might be raised. Prof. Koch uses too many of his own methods or his own modifications of standard methods This is, of course, desirable and often highly valuable in a large university laboratory such as his, where the students are both taught and examined If, however, one of the London medical schools were to adopt individual methods the student would be considerably handicapped when sitting for central examinations.

This book, though not suitable for general teaching purposes, can be strongly recommended to those who wish to have available a collection of workable and carefully tried methods

A Surgeon's China

By ALFRED GERVAIS London: Hamish Hamilton Ltd. 1934 Pp 302. 7*s* 6*d*

THIS is a brilliant little book. The author spent a certain period, how long is not stated, in a far province in Western China, and became fascinated with the problems presented by Chinese mentality. His duties brought him into intimate connexion with all sorts of Chinese men, women, and children, and episodes result that are terrible by their implications, incredible from the native simplicity displayed, humorous often, and sometimes medically interesting Dr. Gervais has written in no sense a historical, political, or medical book about China, nor is this the usual work of travel The events set down, varied as they are, appear all to have earned inclusion by the light which they may shed on the general mind of the Chinaman. We get the feeling, as we read, that Dr Gervais was himself puzzled over and over again by the combinations displayed before him of subtlety and childishness, of close reasoning and easy opportunism, of coarseness and refinement—combinations indeed of most qualities which in modern Europe are held to be antitheses. He leaves China sadly, perhaps a little scared at the influence which Oriental philosophy may have obtained over him—at any rate such seems the impression of his colleague, Dr. Morel, but China has not said its last word for him This is his own statement, and when he feels that he has more to tell he should have a thinking audience to listen.

Schistosomiasis

(*Bilharziasis*). By Dr. RAMESES GIRGES London: John Bale, Sons and Danielsson 1934 Pp 529 25*s*.

It would be difficult to cite a parasitic disease with a more romantic history than the subject of the present monograph, which is of unusual medical and zoological interest The time is moreover ripe for an authoritative review of bilharziasis, and the student of parasitology will certainly appreciate this thorough, competent, and aptly illustrated work The 180 line drawings mostly executed by the author add materially to its value. The historical section has been well worked out and is illustrated with photographs of the pioneers in this field (We note with regret the absence of Prof R. T Leiper from the gallery.) Every aspect of bilharziasis is thoroughly treated. The strictly zoological aspects in relation to the snail vectors of the disease are well described; the symptomatology is dealt with exhaustively, what is known of prophylaxis is well set out and the section on treatment is instructive and complete

Endometriosis

Clinical Pathogenetic and Experimental Investigations By HANS FREDRIK HARBITZ, University Institute of Pathology, Oslo, Norway Oslo Kirstes Boktrykkeri 1934 Pp 400. 10*s* 6*d*

Dr. Harbitz is over modest in disclaiming any intention to give a detailed presentation of the problem of endometriosis, for the subject is dealt with most thoroughly and clearly The history of endometriosis is briefly reviewed and the present position of our knowledge is then set out · records of cases being used freely to suggest, illustrate, or prove any particular point Minute consideration is given to the presence of the tumours in such situations as the groin, navel, laparotomy scars, and the perineum A full description is given of the result of experimental, transplantation of endometrium in rabbits Seventy excellent photomicrographs and a huge bibliography complete a book which will be invaluable to all interested in the subject It may be noted that the apparent increase in the frequency of occurrence of these tumours is the result of a more widespread recognition of their pathology.

THE LANCET

LONDON SATURDAY, DECEMBER 22, 1934

THE STATUS OF THE OSTEOPATH

A DISCUSSION in the House of Lords last week preceding the second reading of the Registration and Regulation of Osteopaths Bill afforded opportunity for presenting the arguments for and against improving the status of the osteopathic practitioner Several peers gave testimony to the benefit of osteopathy in their own experience Lord GAINFORD said that on three occasions he had sprained his ankle and was treated by the medical profession, when it took about six weeks before his ankle was restored to full strength On a fourth occasion a Swedish masseur cured the sprain within a week by manipulation He regarded osteopathy as the best cure for nearly all the accidents at polo, cricket, or football Lord ERNLE said that hunting people knew what benefits they had received from osteopathy, which they had failed to obtain in like measure, or with the same rapidity, from doctor or surgeon Lord AMPTHILL said that the young fellow who put out his knee at football, if he went to a doctor would be told to lie up for three months and probably get a permanently stiff leg, if he went to an osteopath he would be playing again in a week, and Viscount ELIBANK, in introducing the Bill, spoke of the unfairness of stigmatising as quacks and charlatans men who performed services of this kind, for, he said, according to the existing medical laws, unregistered practitioners are all classed in the same category In his appeal for official recognition of the osteopath Lord ELIBANK was not content with stating the case for the fair recognition of the man who delivered the goods, he distinguished rather carefully between osteopathic and medical practice The ordinary medical man, he said, relies in the treatment of disease upon the giving of drugs or the surgical knife, whereas the osteopath relies upon the curative action of the body's own resources There was here a fundamental difference in the view as to how disease originates, registration under the Medical Acts was not intended to be an obstacle in the way of developing medical science or to prevent the discovery and use of new methods or new principles in the treatment of disease There was nothing in the Bill to enable an osteopath to obtain admission to the Medical Register All that was desired was admission after specified qualification to a register of their own, allowing them to use such titles and descriptions as would identify them as osteopathic practitioners Their claim to diagnose and treat disease was, he said, not now seriously contested in the United States of America or in Canada

Two medical peers were willing to admit, indeed to recognise gladly, the value of manipulative treatment, of "the gift of hands" which can by training and education be brought to great dexterity and skill, but not the claim to found a new cult of medicine The Bill, by the way, would give the osteopath power to sign certificates of birth and certify the cause of death (a proposal which "staggered" Lord HEWART) In firmly resisting this claim, Lord MOYNIHAN gave a thumbnail sketch of the development of medicine which was historically the parent and nurse of all sciences, for the method of inductive logic, the method of inquiry, comparison, generalisation, and the formation of conclusions was introduced by Hippocrates This was the scientific basis of medicine to-day Osteopathy, he said, had no connexion with the main stream of scientific medicine, medicine and osteopathy do not run on parallel lines—they are in direct and hostile opposition the one to the other Manipulative methods were finding a place to-day in the curriculum of orthodox medicine, but he could find no room for special sanctions for any branch of medicine The Bill embodied an endeavour to destroy the Hippocratic unity of medicine and to put in its place a theory of medicine that was the derision of all competent and experienced minds Lord DAWSON also emphasised the complete liberty of thought within the medical profession It was the first business in the training of medical students to see that they had trained minds, after passing their qualification they were free to take up osteopathy or any other line of practice But he assured his compeers that osteopathy is itself not a science, it had indeed the support of no scientific man of any eminence, and to give an osteopath the status of a medical man without his basic training, without training in pathology, would be a public danger Lord HORDER, who was not present, took another opportunity of publicly saying that it was difficult for him to understand how a single therapeutic measure like osteopathy could be erected into a system of medicine, for the most important thing in medicine was diagnosis But, he added, if the public wanted to try out one particular method of therapeutics for all diseases he did not think that doctors ought to protest

On behalf of the Ministry of Health, Viscount GAGE suggested that the Bill would to all intents be inviting the public to decide between two rival schools of medicine, for osteopathy was not a function, like dentistry, dealing with one part of the human body alone Osteopathy was not in fact the only rival to medical science Some present were prepared to testify to the extraordinary efficacy of mind healing Why not set up yet a third school? There was, he reminded the House, nothing in the law to-day to prevent any person, whether registered or not, from practising osteopathy or any other system of healing he chooses There are, said Lord GAGE, three courses open to osteopaths (1) to convince the General Medical Council of the changes which they think necessary in the curriculum and then seek admission to the Medical

Register in the ordinary way, (2) to remain unregistered and convince the General Medical Council if possible that registered practitioners can properly be allowed to give anæsthetics for them. This, he said, would involve proof of a proper minimum standard of medical education and probably the compilation of a list of osteopaths recognised for the purpose by the General Medical Council; and (3) to adopt the position that the registered medical practitioner is the principal responsible for diagnosis and treatment, and the osteopath a technician possessed of special manipulative skill whose responsibility is confined to carrying out manipulative work under the direction of his principal That, he said, was as far as the Ministry of Health could go

THE EPILEPTIC PERSONALITY

THERE is general agreement that epileptics, as a class, are more egocentric and more sensitive than the rest of the community—that they are poor in ideas and unstable in their emotions. Thus they are said to possess the epileptic personality. But the place of the personality in the picture of the disease is less easy to define. One school of thought supposes that an inherited psychological constitution is the primary factor, and that the fits themselves are the outcome of the intolerable stresses which result from its contact with an unfriendly world. Another, and perhaps more widely accepted view, is that the traits which make up the epileptic personality develop because any child liable to fits is regarded as peculiar by those around him. The issue is not so simple as this. The relation of the peculiar temperament to the disease can perhaps only be studied satisfactorily in individual cases where its development can be watched over a number of years and can be carefully correlated with the type and incidence of fits and change of environment.

Intimate knowledge of home conditions and of the family history will be required to make such observations of much value, and in view of the need for appropriate data Dr. EDWARD BRIDGE[1] of Baltimore has compiled some detailed reports on a few children under his care. All who have to deal with epileptics, and who read Dr. BRIDGE's interesting and careful compilation, will appreciate the clarity with which he presents his picture of the child's development under difficulties. But his conclusions are not so clear-cut. On the strength, indeed, of one remarkable case, he claims that the personality can be approximated to the normal by the provision of a proper environment (using that term in its widest sense), although the epilepsy is unaffected, and hence he argues that it is unlikely that abnormal personality can cause the disease. If this be accepted, defects in personality may, Dr. BRIDGE considers, be attributable to faulty environment, to anatomical cerebral defects such as scarring, tumour or developmental anomaly, or to some physiological disturbance which at the same time causes fits. The chance of removing them must depend on the relative importance of the contributory factors; faulty environment is capable of remedy but anatomical brain defect is not. The factor of physiological disturbance as a cause alike of attacks and of temperamental defects is certainly one that deserves more consideration. The irritability which often precedes a fit by hours or even days is explained by such a conception, and the great improvement in temperament which often follows a cessation of attacks may well be due to some undetermined physiological change which was also the cause of their stopping In the same way a common antecedent disturbance may explain mental abnormalities following a series of fits, while the importance of physiological factors is emphasised by the conspicuous influence of recognised physiological disturbances, such as menstruation, on the course of epilepsy. The lesson of all this seems to be that difficulties of personality or even gross mental disturbance should not necessarily lead to a gloomy prognosis—at least until an attempt has been made to find the cause of the difficulties or disturbance. In some cases, clearly, the cause can be removed; though it must always be remembered that recurring convulsions may ultimately bring about gross changes in the structure of the brain

THE PLACE OF IRON IN HOOKWORM ANÆMIA

THE effects of hookworm infection on the blood of tropical races cannot be interpreted without knowledge of their normal blood standards L. E NAPIER[1] has reported that the blood of 43 apparently healthy Indian members of the staff of the Calcutta School of Tropical Medicine gave an average of 5,345,000 red cells per c.mm. and a hæmoglobin percentage of 105·9 (Hellige). These figures confirm the conclusion that low hæmoglobin values are not normal for dwellers in the tropics, and show that no anæmic hookworm case should be considered cured of the effects of infection until high hæmoglobin figures have been reached The great and manifest value of iron in bettering the blood state of victims of this infection irrespective of whether the worms are left or removed has been amply confirmed in reports published this year from Egypt,[2] Porto Rico,[3] and Brazil[4] Nevertheless, when worms have been left, normal hæmoglobin values have not been reached even by CRUZ, who after carrying on iron administration for six to twelve months reached an average hæmoglobin percentage of 81 only In comparing the results of iron administration in those who have been de-wormed and in those who have not, it is unfortunately necessary to leave out of account the laborious Porto Rican hospital work, since the records presented[3] offer no evidence that the patients had been rid of their worms. Indeed the presumption is that they had not, for there is no mention of any fæcal examination made to determine this, the anthelmintic was hexyl resorcinol used in a defined manner, and the published reports of the writers who advocated its use in this particular way showed that nearly half the treated remained infected, even when the test was made by a technique which lacks ultimate delicacy and so increases the apparent numbers of cures In animal experiments it has become at least usual to employ the most delicate available test when attempting to distinguish infected from non-infected, the distinction is not less important in observations on man The presumption that most of these persons still harboured hookworms after anthelmintic treatment is strengthened by the likeness of their blood pictures to those reported by the late B K ASHFORD and his colleagues[5], in all of them hookworms remained after repeated anthelmintic treatments, and in none of them did persistent treatment by iron succeed in raising the hæmoglobin percentage over 75 In the Egyptian work,[2] hexyl resorcinol having been tried and rejected as unsatisfactory, every patient was repeatedly treated with carbon tetrachloride, and intermediate fæcal examinations were made repeatedly to check the drug's effects, so that there is little doubt about the de-worming In those rid of their worms the percentage rise in hæmoglobin was conspicuously higher than in those who remained infected, iron being administered to both series. And this clear pointer for treatment is made even more prominent in a later report by S AZMY BOY,[6] who found that cessation of iron administration to persons still parasitised led to a return of their anæmia

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[1] Arch Neurol and Psychiat, October, 1934, p 723.

[1] Napier, L E. Ann Rep. Calcutta School Trop Med, for 1933, p 87.

[2] Biggam, A G, and Ghalioungui, P.: THE LANCET, 1934, ii, 299.

[3] Rhoads, C P., Castle, W B, Payne, G. C, and Lawson, H A · Medicine (Baltimore), 1934, xii, 317.

[4] Cruz, W O. Mem Instit Oswaldo Cruz, 1934, xxviii, 391; see THE LANCET, Nov 17th, 1934, p 1116

As to the state of the bone marrow, both in Porto Rico[3] and in Brazil,[4] it has been confirmed that the essential feature is a normoblastic hyperplasia accompanied by a microcytic hypochromic anæmia Though some aspects of the Porto Rican work add weight to the conclusion[7] that in practice anæmia is rarely due to a simple deficiency of a single factor, yet the condition just noted is in fact precisely that described by L J WITTS in his second Goulstonian lecture for 1933, as occurring when the bone marrow obtains too little iron for adequate hæmopoiesis, this process is checked at the normoblastic level Such deficiency can be brought about by chronic amorrhage, and the accumulating evidence, oth experimental[8] and clinical,[2] that hookworms roduce chronic hæmorrhage can no longer be rushed aside The Egyptian report tells that cult fæcal blood was found in nearly all the cases xamined This has not always been so, and as e have noted[5] Dr LANGEN estimates its usual ction as equivalent to that produced by the wallowing of 2 to 3 c cm of blood The efficacy f testing methods may explain some discrepancies, or at present can the suggestion be finally excluded hat—especially in cases of iron hunger—iron rom the blood which is swallowed and voided by hookworms may be reabsorbed lower down the host's alimentary tract Chronic hæmorrhage being then an established factor in hookworm infection, it follows that blood loss may so deplete iron reserves that adequate hæmopoiesis is impossible without extraneous iron in those considerable quantities which are necessary for the purpose

There is an illuminating analogy between the hypochromic anæmia of hookworm infection and that of pregnancy As to the latter, the fœtus depends absolutely on its mother for food and shelter, it is biologically speaking a parasite Its demand for iron is great and this it filches from its mother and hoards, its own iron reserve in these anæmic cases is built up at the expense of its mother's, and while iron administration will relieve her anæmia, it will not cure it until she is rid of this drain So may hookworms also at last exhaust the host's iron reserve by their blood-sucking, and so long as they continue to do so the blood, as the work quoted above indicates, will often fail to recover its normal quality Again, the suggestion that iron is the best preventive of hookworm anæmia leaves out of all account the fact that the infected person is hygienically a great risk to himself and others The matter of essential importance is then to rid the man of his worms It may sometimes be necessary in his own interest to raise by iron administration the quality of his blood, and with it his general strength, before subjecting him to the strain of an anthelmintic, but that does not invalidate the conclusion that in his own interest and that of his fellows he must be rid of his worms at the earliest safe moment It may be possible to keep up the water level in a leaky cistern by increasing the inflow, but in the long run it is cheaper, safer, and less exacting to stop the leaks

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A MEMORANDUM has been circulated by the medical secretary of the British Medical Association on the Registration and Regulation of Osteopaths Bill, the memorandum reaches us as we go to press Dr Anderson points out with excellent clearness that the effect of this Bill would be to set up two classes of practitioner under two different Acts, thus defeating the intention of the existing Medical Acts to draw a clear line between persons who have and persons who have not followed an authorised medical curriculum He emphasises the freedom enjoyed by the medical practitioner of to-day to practise any form of treatment which he regards as beneficial, including osteopathy, but observes shrewdly that the Bill to which the House of Lords has decided to accord a second reading does not define osteopathy, suggesting rather that osteopathic treatment covers practically the whole field of medicine "Medical education" Dr Anderson concludes "must rest upon a broad scientific foundation so that the student may be both competent in practice and trained to judge the value or want of value, of future developments such a training cannot be provided in institutions restricted to a particular theory"

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[5] See THE LANCET 1934 i [illegible]

[6] Jour Egyp Med Assoc 1934, xvii [illegible]

[7] THE LANCET, Dec 8th 1934 p [illegible]

[8] Ibid 1934 [illegible]

ANNOTATIONS

THEOBALD SMITH

TIME will come for a considered study of the life and work of Dr. Theobald Smith, who died at Princeton, New Jersey, last week, in his seventy-sixth year[1] For 20 years he occupied the chair of comparative pathology at Harvard, and for another 15 years directed the department of animal pathology at the Rockefeller Institute They were fruitful years and his output was immense But at this moment it is only needful to recall an incident in the nineties of last century which is one of the romances of pathology. Paul de Kruif has told the story in his Microbe Hunters.

> "Southern cattlemen bought northern cattle, they were unloaded from their box-cars and put to graze on the fields along with perfectly healthy southern cows, everything would go well for a month or so, and then, bang! an epidemic burst out among the northern cows They stopped eating, they lost dozens of pounds in weight a day, their urine ran strangely red, they stood aimless with arched backs and sad eyes—and in a few days every one of the fine northern herd lay stiff-legged on the field The same thing happened when southern steers and heifers were shipped north; they were put into northern fields, grazed there awhile, were driven away perhaps, when northern cows were turned into those fields where their southern sisters had been, in thirty days or so they began to die...
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> "What was this strange death, brought from the south by cattle never sick with it themselves, and left invisibly in ambush on the fields? Why did it take more than a month for those fields to become dangerous? Why were they only dangerous in the hot summer months?"

Commissioned by the Metropolitan Health Board to investigate, Theobald Smith and F L. Kilborne discovered the cause of this Texas or red-water fever to be a protozoon inhabiting the red blood corpuscles, now known as *Babesia bigemina*, but they did not stop there, they went on to demonstrate that this parasite was transmitted by the tick *Margaropus annulatus* Their experiments proved that cattle imported to infected areas did not fall victims to the disease if they were kept free from ticks Furthermore, by placing the larvæ of ticks, hatched in the laboratory from eggs laid by ticks which had been removed from infected animals, on clean calves they showed that the infection taken up by one generation of tick passed through the eggs to the succeeding generation of tick This was a complete piece of work. Had it been concerned with a disease of man instead of with one of cattle it would certainly have attracted as much attention as the subsequent discovery of the transmission of malaria by mosquitoes. From the zoological point of view the work of Smith and Kilborne was as important as, perhaps more important than, later discoveries of the insect transmission of disease-producing parasites Texas fever is now under control and Theobald Smith must be ranked with Manson, Ross, and Bruce So much for an almost forgotten story in microbiology. Theobald Smith's achievements in other spheres are better remembered. In 1904, independently of Richet and Arthus, he gave the original description of classical anaphylactic shock in guinea-pigs In 1907 he proved that it was possible to immunise guinea-pigs actively by the injection of a balanced mixture of diphtheria toxin and antitoxin, and in 1909 he wrote "the method invites further tests as to its ultimate applicability to human beings" In 1922 he discovered that maternal bacterial antibodies were excreted in the colostrum of the milk of cows and that calves deprived of this invariably died of bacterial infections As early as 1895 he described guinea-pig scurvy and in proving that it was produced by a diet deficient in green stuff carried out the earliest experimental work on avitaminosis. Other subjects he investigated were blackhead of turkeys, streptococcal sore-throat, and the differentiation of bovine and human tuberculosis But, however important these later researches, Theobald Smith's claim to a niche in the temple of fame rests on being first to demonstrate the insect transmission of a protozoal parasite It was in recognition of this that he was elected a foreign member of the Royal Society and awarded its Copley medal in 1932, in which year also the Royal Society of Tropical Medicine and Hygiene conferred on him the Manson medal.

LONDON VOLUNTARY HOSPITALS

LAST week at a general meeting of King Edward's Hospital Fund for London, the Prince of Wales announced that for the third year in succession a sum of £300,000 was being distributed in aid of the voluntary hospitals in London, in addition to a sum of £20,000 in special grants towards the pensions scheme It had, he said, been a great effort and he congratulated the donors on subscribing more than £2,000,000 a year in voluntary gifts and the patients on contributing last year £1,200,000 of which £365,000 (or precisely £1000 a day) came through the Hospital Saving Association But in spite of the success of this great effort there was no place for slackening: the margin of income over expenditure was small and hospital expenditure was constantly increasing to keep pace with advances of medical science Several hospitals in fact showed a deficit on the year's working He expressed satisfaction that several more hospitals were refraining from waking their patients before six in the morning; only 15 per cent. now found it necessary to do so and it was hoped that their difficulties might soon be overcome He spoke of the serious embarrassment to hospitals owing to the increasing number of accidents on the road which was not only a source of heavy expense but led to the diversion of beds from other purposes There was general agreement that remedy was needed but not on the form of the remedy; at the moment the officers of the Fund were watching how the partial provision made by Parliament worked out in practice In spite of special grants towards the provision of accident beds local cases of the kind for which the hospitals were intended were still being sent elsewhere The best remedy, he added, would be a reduction in the number of accidents. More pay beds were being provided for middle-class patients and the Fund was making inquiry how best to give all hospitals the powers now possessed by many of them of providing paying beds for those who could not otherwise obtain the treatment they needed.

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[1] The portrait we reproduce is taken from Hervorragende Tropenärzte by Prof G Olpp (Munich . Otto Gmelin, 1932)

Time saving methods in out patient work were being studied and a memorandum was shortly to be issued with suggestions how to save the long waiting to obtain medicines, this memorandum would be circulated for discussion Another method of relieving pressure on the out patient department would be for district nurses to visit patients at home while still attending at hospital As soon as funds were available it was proposed to make grants to hospitals to enable them to pay district nursing associations for cases of this kind Finally the Prince referred to the many big schemes of hospital extension as a welcome sign of financial recovery

MUSCULAR CONTRACTION

THE extent of shortening of muscle fibre in muscles with different types of action has recently been investigated by Dr R Wheeler Haines, who has taken actual measurements on the cadaver He finds that the shortening is 57 per cent of the total natural length, a percentage a little greater than that usually accepted (50 per cent) very possibly the difference corresponds to that between his "natural" position and the "mid position" of older writers Dr Haines comments on the interesting fact that, in some muscles, contraction is ineffective before the full movement is attained, for example, in the long head of the femoral biceps The subject in some of its aspects has arisen in anatomical circles during the last century or more the late Prof A M Paterson drew attention to it during the war, and Prof D Waterston has more recently brought it under the notice of the Anatomical Society The questions have nothing to do with the force of the contraction, which depends on the cross section of the muscle, nor with the actual effect of the contraction, which has to do with many merely physical matters of direction, leverage, and so on they are only concerned with the extent of the actual contraction expressed in ratio Good examples of what Dr Haines terms "muscles of short action" may be seen not only in the biceps femoris but in the semimembranosus when the hip is extended, in the rectus femoris as an extensor of the knee when the hip is flexed, or in the calf muscles when full plantar flexion is combined with flexion at the knee In the case of the biceps the extension of the hip leads to shortening of the long head of the muscle, so that the extra shortening involved in full flexion of the knee would be more than 57 per cent of the length thus the long head relaxes, but the short head is not affected by the hip movement, and carries on its contraction to full knee-flexion Comparable adjustments exist for the rectus and gastrocnemius, but the semimembranosus has no such help The facts remain of little more than academical interest at present, but one can imagine conditions under which a philosophical surgeon might apply them in his clinical work

URTICARIA

IT is often stated, but rarely demonstrated, that a focus of infection is the fons et origo of a remotely situated pathological process. Fink and Gay's[1] short review of 170 cases of urticaria and angioneurotic œdema seen at the Johns Hopkins Hospital is therefore especially interesting, for it contains a group of cases characterised by "the presence of some focus of infection the removal of which resulted in the permanent disappearance of the urticaria within a reasonable period of time" The group contains 52 cases, almost all with infections of tonsils, sinuses, or teeth The "removal" was surgically effected in only 35 of them, the rest being treated with vaccines, and cure lasting two years or more is claimed only in 74 per cent Clearly then the group criterion just quoted has not been strictly adhered to, and this weakens the authors' argument They give details, however, of two cases in a patient of 36 an urticaria of six years' standing disappeared after removal of infected tonsils and two "abscessed" teeth, and in another, aged 23, removal of two dental abscesses was followed by the disappearance of an urticaria that had been recurring for a year, the patients were followed for four and two years respectively It is unfortunate that more such examples were not given in detail They may not amount to scientific proof of the focal infection thesis, but if they occur too often to be accidental they are sufficient evidence of its practical value

Fink and Gay's second group includes patients sensitive to food substances, cosmetics, drugs, and the acarus of scabies It is no new observation that an urticaria may be due to a coexistent scabies, but it is not so widely known as it should be, for the scabies is often missed and the only effective treatment for the urticaria consequently omitted It is interesting that, in the diagnosis of this "allergic" group, Fink and Gay rely mainly on carefully taken histories and the trial application and withdrawal of suspected substances, "skin tests were chiefly of corroborative value" The remaining groups are psychogenic, endocrine and "undetermined," but these are not necessarily watertight subdivisions For example, the numbers of cases developing urticaria for the first time in each of the months of the year are indicated on a diagram, which shows a striking peak for January in every group except the small endocrine one. This suggests that the upper respiratory infections of midwinter are a contributing factor in bringing on urticarial attacks of varying ætiology Nevertheless Fink and Gay conclude that the best hope of improved results in the treatment of urticaria lies in the careful clinical study of every case on the broad basis of some such grouping as they have adopted.

THE LUMINOUS WOMAN OF PIRANO

CERTAIN animals and plants are well known to give off phosphorescent light, and from time to time luminous human beings have been reported Generally, but not always, this emission of light has been noticed just before death Little is known of the cause of this luminosity, and curiosity has been quickened by Anna Monaro, the Luminous Woman of Pirano, of whom Dr G Protti of Venice, has recently published an account[1] Dr Protti first collected the evidence of eye witnesses He found that the light had not been seen before the end of February The usual time of its appearance was during the early part of the night, never in the daytime, or when Monaro was only lightly asleep; it lasted never longer than three to four seconds, it always appeared in the region of the heart it varied in colour from green to red Monaro herself was unaware of the light and it left no trace of odour, heat, or colour It had no connexion with menstruation and no medicine or photodynamic substance was taken Dr Protti next made his own examination and found Monaro normal in every way, except that she suffers from asthma and has slightly raised blood pressure An electrocardiogram was normal Inquiry into her life-history showed that she had spent an unhappy childhood, married young, and borne 12 children, with four abortions. In 1912 she was seriously ill with broncho-pneumonia and pleurisy. She lives almost in indigence, but such food as she eats is in no way out of the ordinary. During Lent she fasts strictly, eating only soup and milk, and at this time the phenomenon manifests itself most frequently, particularly during Holy Week when the fast is almost absolute. In one night the light appeared 25 times. Convinced that the appearance of the light was not the result of collective hallucination, Dr. Protti installed a powerful cinematograph with a supersensitive film on which an automatic registration of the duration of the light could be made. Above the region of the heart he suspended a photo-electric cell connected with a sensitive galvanometer, and in order to eliminate all possibility of electricity being used he arranged an electroscope enabling him to examine the state of the electric charge of the air round the patient. The bed was insulated from the floor. With the room in complete darkness a light was seen after a time to emerge from the bedclothes and Dr. Protti immediately started the cinematograph at 16 photograms per second. The light lasted $3^{3}/_{16}$ seconds and gradually faded away. It illuminated the jaw and cheek bones, but caused little shadow contrast. It arose from the region of the heart from an area the size of an adult's open hand, and was sufficiently strong to make the adjacent beds visible. No current was registered on the galvanometer, and when the observation was controlled there was no appreciable change on the electroscope. However, a definite shadow appeared on the cinema film. Monaro, whose sleep is usually broken and disturbed, woke with a start. At the time the light appears the heart accelerates to about double the usual rate. An estimation of the radiating property of the patient's blood showed this to be three times that of normal blood, and it is considered that this is significant in connexion with the origin of the light. This property is said to vary with the basal metabolic rate; clinically there was no evidence of toxic goitre, but no metabolism estimation was made Having, as he believes, excluded trickery and the taking of phosphorus Dr. Protti suggests that the religious complex which dominates the patient disturbs the endocrines, upsets the vago-sympathetic balance, and induces certain salts of the blood, notably sulphur compounds, to become phosphorescent. Such a change, he thinks, is facilitated by the fasting state More recently Dr. G. W. Crile is reported to have demonstrated at Cleveland the emission of both visible and infra-red waves from the brains of dogs, the radiation being increased by thyroxine and adrenaline and decreased by anæsthetics Alcohol first increased and then diminished the radiation.

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[1] Fink, A I, and Gay, L N Bull Johns Hopkins Hosp 1934, lv, 380

[1] Minerva Medica 1934 i, 341

CHARING CROSS HOSPITAL MEDICAL SCHOOL

PUBLIC appeal was launched at the beginning of November for assistance to the medical school of Charing Cross Hospital, the occasion being the centenary of the school which was founded in 1834 by Dr. Benjamin Golding. The appeal was made by Air Vice-Marshall C A H Longcroft, and Major Colin Cooper, who presided over the preliminary meeting, opened the subscription list with a gift of £1000 "in memory of all those members of the Royal Flying Corps who fell in the war." Dr Golding who founded the school was a far-sighted man He saw the lack of hospital relief in the densely populated district where he lived, and he opened his house in St. Martin's-lane for the reception of patients and speedily found that the accommodation was outrun. The possibility of founding a charity then suggested itself and a general infirmary and dispensary with 12 to 15 beds was started in Villiers-street while support of the proper establishment of the hospital was invited and secured In 1831 the foundation-stone of the present Charing Cross Hospital was laid and the hospital, with a medical school within its buildings, was opened on Oct. 1st, 1834 The original design of the institution was the foundation of a charity and a medical school as integral parts "where practical information may be conjoined with scientific instruction" The story of the development of Charing Cross Hospital from then up till now is well told in the brochure justifying the appeal. This, incidentally, is the only public appeal which the school has ever made, but we may recommend to our readers the account of the hospital and school written some 20 years ago by Dr. William Hunter, on which the historical information is based.

The present school buildings were erected in 1881 Since then many additions and alterations have been effected in order that their efficiency should be maintained. Further work of this nature is now necessary. In particular, extended laboratory accommodation for the teaching of pathology, bacteriology, and public health is essential One of the lecture theatres requires to be modernised by the provision of new seating and appointments By reason of its age, the central heating system, which has been installed for many years, no longer functions with economy and satisfaction and must consequently be entirely renewed Accommodation for research is at present scanty and needs urgently to be extended, and other structural alterations are also immediately desirable If, as is hoped, it is possible to establish a students' hostel, certain of the accommodation in the basement of the school would be released and would be utilised for the provision of a squash rackets court for the Students' Union Such a means of providing recreation and exercise for the students during their moments of leisure is to highly commended

Donations may be sent to the secretary, Charing Cross Hospital Medical School, 62–65, Chandos-street, London, W.C 2, or to the school bankers, Messrs Coutts and Co, 440, Strand, W.C.2, for the credit of "Charing Cross School Appeal" account They may be specifically allocated to any of the objects of the appeal, or may be left for allocation as the school committee of management may think most desirable.

ANOTHER ANALGESIC FOR CHILDBIRTH

MANY barbiturate compounds have been tried as analgesics in childbirth None has hitherto been free from disadvantages which, on the whole, more than counterbalanced the advantages provided. Now, however, the claim is made[1] by Dr. Emmet H. Rund, of St. Louis, Mo, for allobarbitone B.P C. (diallyl barbituric acid) that it alleviates pain, relaxes cervix and perineum, does not retard labour, and does not depress the respiration of the new-born infant. Allobarbitone is nearly insoluble in water, but combined with four parts of urethane it goes readily into the 10 per cent solution known in this country as Dial ampoules Ciba This solution was given by intramuscular or intravenous injections of 2 c cm Usually one such injection is given when labour is well established, and a second one about half an hour before the expected end of the second stage, the first has usually been intramuscular, the second into a vein The intravenous injection acts more quickly than the other Dr Rund reports on 115 consecutive patients with no deleterious effect upon the baby and no complication in the mother except for transient diplopia in two cases The warning is however given that administration of large doses of the solution before pains are well established appears to retard labour A shorter series of similarly successful cases has been reported [2] by Dr Porter Brown, of Salina, Kansas One great advantage over other barbituric analgesics is that the dial urethane solution does not produce excitement, but acts as a sedative The patient rests or sleeps between pains Dr Rund thinks that the urethane may assist the sedative action of the dial as well as making it soluble

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[1] Amer Jour Surg, November, 1934, p 288

BROADCASTING AND THE G M C

THE General Medical Council would seem to give little direct guidance on conduct to medical practitioners other than through their interpretation of the warning notices printed in the Medical Register A discussion in camera at the last executive committee was followed by a debate in camera at the Council meeting when it was resolved to inform the British Broadcasting Corporation that the G M C could take no responsibility for the B B C 's policy as to broadcasting on medical or public health subjects, or as to broadcasting by registered medical practitioners The resolution went on to assert the G M C 's opinion that it is desirable in the public interest for registered medical practitioners to broadcast anonymously It seems that the director general of the B B C had in a letter last June submitted various suggestions for the approval of the G M C Of these suggestions the G M C has approved the following (1) that correspondence addressed to broadcasters who are medical practitioners should not be forwarded to them, and that the anonymity of speakers should be strictly observed in connexion with any inquiries relevant to them or to their broadcast talks, (2) that the G M C should be furnished after the event with the names of the practitioners concerned and with the text of the matter in question After making these recommendations the Council decided to rescind its resolution of 1932 in which it was stated that "when in the interest of the education or information of the public, it is desirable or necessary that subject matter concerning medicine or public health should be broadcasted, the procedure is that the person broadcasting and the remarks to be broadcasted should be approved by a registered medical practitioner nominated for this purpose by one of the following bodies"—viz, in England the Ministry of Health, in Scotland the Department of Health, in Northern Ireland the Local Government Department Ministry of Home Affairs, in the Irish Free State the Local Government Board At that time the registrar of the G M C was empowered to reply in that sense to inquiries on the subject To outward appearance at any rate the existing arrangement has been working well for no charge in connexion with broadcasting has reached the stage of public inquiry by the G M C And it is just over seven years (Oct 5th 1927) since a medical officer of health first broadcasted (in his own name) in this country The practitioner will now have to decide without specific help from the G M C whether if he engages in broadcasting his action can be construed as "advertising, whether directly or indirectly, for the purpose of obtaining patients or promoting his own professional advantage" An interesting sidelight on the relation of medicine to broadcasting is thrown by a controversy which has arisen in the United States of America where the National Advisory Council has initiated a series of broadcasts under the title "Doctors, Dollars, and Disease" The *Journal* of the American Medical Association complains that this Council is overwhelmingly controlled by those who believe in State medical service and the socialisation of medicine and that it contains no definite representative of the 100,000 physicians who form the Association The *Journal* regards the broadcasting programme as an attempt on the part of the committee on the costs of medical care to further its *propaganda and* reproaches the National Council with undermining the medical profession of America

DISRUPTION OF THE ABDOMINAL INCISION

THE practice of the Joseph Price Hospital in Philadelphia, as described by J W Kennedy,[1] has been to dispense with absorbable suture material and to sew up all abdominal wounds with through-and-through stitches of silkworm gut This practice is based on several strong objections to the *methods* used by the great majority of surgeons Kennedy indicts these methods as "complicated technique," "traumatic in every step," and an "abuse of delicate tissues." In the first place he holds that most of the wounds he sees are too long by a third to a half, secondly he objects to traction and transfixation of the wound edges by metal instruments *Continuous* stitching with catgut is condemned on the grounds that it strangulates the tissues; that catgut so quickly loses its tensile strength as to be useless in resisting disruption of the wound edges, and that it acts for the whole time before its complete absorption, as a foreign body, causing exudation and œdema of the wound, and *predisposing to sepsis* The result of suture of the wound in layers with use of catgut is said to be a much increased liability to complete and partial disruption (with possible protrusion of viscera) and to seriously infected wounds Both dangers Kennedy claims are obviated by use of his technique His sutures are inserted three to the inch They include in their bite every *layer of* the divided abdominal wall and are tied without much traction, they are removed on the *ninth or* tenth day During insertion of the stitches, the skin and peritoneum are pushed back by the thumb and middle finger so as to allow the muscle and fascia to bulge forward between them This ensures that the needle in its passage through the tissues *shall* get a firm grip of the muscle and fascial layers A straight needle is used and care is taken, as it passes from skin to fascia or from fascia to skin to *press* back the fat so that it shall not protrude between the stitches In wounds requiring drainage the use of interrupted stitches, allowing each *suture to look* after itself, and the absence of any buried *material* are said to be of great advantage.

Complete disruption of the abdominal wound has a high mortality, and Kennedy quotes the figures 30 to 47 per cent from different clinics in America No deaths traceable to either cause have occurred, however, at the Joseph Price Hospital in the combined experience of himself and of Dr Joseph Price together covering 56 years of surgical practice. Neither of them has ever had experience of a wound bursting open with protrusion of viscera

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[2] The Lancet Nov 10th p 1060

[1] Amer Jour Surg, September 1934 p 512.

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXXII.—PROGNOSIS OF FEMORAL HERNIA

THE ætiology of femoral hernia has been frequently investigated and discussed, and there are several theories of its causation still current. The belief, however, that it is usually an acquired condition is commonly held, and this receives strong confirmation from the fact that it is seldom seen in infants and small children and is rare in the second decade of life. It is a disability of adults only and grows commoner as life advances, being more frequent in women than in men, and among women more frequent in those that have borne children.

Consideration of the ætiology of femoral hernia is not a purely academic matter, being intimately concerned with the anatomy of the parts and so with treatment and prognosis

The main anatomical facts concerning a femoral hernia are that the sac first descends vertically downwards through the crural canal with the compressible femoral vein on its outer side and the sharp edge of the lacunar (Gimbernat's) ligament on the mesial side. The sac then turns forwards through the saphenous opening, so that the fundus lies in the inner part of Scarpa's triangle, below and to the outer side of the pubic spine Usually the neck of the sac is narrower than the fundus, though nearly always the fundus is actually smaller than it seems to be on clinical examination, since it is usually embedded in a considerable lump of properitoneal fat It is frequently this lump of fat which renders the hernia apparently irreducible The sac is often, in fact, of very small capacity, and its presence may be quite unknown until suddenly it becomes filled with an extrusion of abdominal contents.

As in inguinal hernia, it is usually the neck of the femoral sac which is its least extensible portion, and this, coupled with the rigidity of the lacunar ligament, renders the liability to strangulation of the hernia particularly great. It is, in fact, stated that strangulation is 8 to 10 times commoner in femoral than in inguinal hernias. The prognosis of untreated femoral hernia is at once seen, therefore, to be bad, relatively to that of inguinal hernia, since a greater liability to strangulation must carry with it a greater morbidity There are other features which render strangulation of a femoral hernia particularly dangerous First, the hernia may develop very insidiously, so that its existence is unknown until strangulation takes place Secondly, the hernia is often so small that it may be entirely overlooked as a possible cause of obstructive symptoms Only careful examination of every hernial orifice whenever obstructive symptoms arise can ensure that this serious mistake shall not be made Thirdly, the small size of the sac and its position gives rise in a considerable proportion of cases to the condition known as "Richter's hernia," in which only a part of the circumference of the gut is strangulated Obstruction is therefore for some time incomplete, and the symptoms correspondingly inconclusive, so that operation may be delayed longer than it should be Fourthly, the anatomical peculiarities of the crural canal, in that it has a soft structure on the outer side and the tense, sharp edge of the lacunar ligament on the mesial side, produce unequal pressure on the walls of the strangulated gut. The result is a rapid necrosis of the small portion of the wall of the gut in contact with the edge of the lacunar ligament and the consequent development of a potential perforation, through which can occur a gush of intestinal contents immediately the gut is disturbed by unwise taxis or by inept operation. If this catastrophe should happen the patient will almost certainly die of acute peritonitis, and safety therefore depends in a high degree on the skill and knowledge of the surgeon.

Another factor contributing to the seriousness of the prognosis is the advanced age and the debility of many of the patients, so that general anæsthesia and surgical shock are to be avoided if possible.

The patient's safety in strangulated femoral hernia will therefore depend on (1) early diagnosis; (2) the use of local analgesia, which should in my opinion *always* be used in dealing with strangulated hernia; (3) the avoidance of all unnecessary trauma—local analgesia is an important aid in attaining this end, since it eliminates the necessity for undue hurry or violence; (4) the routine performance of the "high" or "inguinal" operation, the peritoneal cavity being opened via the inguinal canal so that the gut entering and leaving the hernial orifice can be identified and controlled before the sac has been touched. This manœuvre ensures that the catastrophe due to a perforation (referred to above) shall not occur, and facilitates reduction of the strangulated gut The opening in the peritoneum also makes easy an immediate resection of the damaged portion of the gut when this is necessary.

The seriousness of the prognosis of strangulated femoral hernia, and therefore of all untreated femoral hernias, is illustrated by the following figures taken from the statistical tables published by St. Bartholomew's Hospital over a period of 10 years.

Strangulated Femoral Hernia, 1919–28

Admitted . 171 (male 38, female 133)
Died . .. 25 (,, 6, ,, 19)
Percentage mortality 14·6.

During the same period only 138 strangulated inguinal hernias were admitted, although inguinal hernia is so very much more common than femoral. The percentage mortality was approximately the same.

RESULTS OF TREATMENT

The prognosis in femoral hernia depends also upon the results of treatment The hernia can sometimes be successfully treated by the use of a properly made and properly fitting truss But the anatomical features prevent any truss from being quite efficient, since the portion of the hernia in the crural canal cannot be controlled by the pressure of a pad on the skin. The fundus may be kept empty, but abdominal contents can still descend into the neck of the sac All patients with femoral hernia should therefore be urged to undergo operation rather than risk treatment, only partially efficient, with a truss There are practically no contra-indications to the performance of a properly designed operation under local analgesia

PROSPECTS OF CURE

Consideration of the prognosis in femoral hernia must include the results of operation and the prospects of cure It is difficult to obtain statistical evidence which can be relied upon, since few surgeons have made a practice of following-up their patients after operations for this condition, but such statistics as are available indicate a recurrence-rate of at least 5–10 per cent Formerly the operation was performed through a vertical incision in Scarpa's triangle, the sac being cut off just below the inguinal ligament and the opening of the crural canal closed by a suture This incision left a very ugly scar in the groin, and was theoretically unsatisfactory, since the whole of the neck of the sac could not be removed by this route During the last ten years this low operation has been largely replaced by the inguinal operation, which enables the surgeon to remove the whole of the sac flush with the general peritoneal cavity The majority of patients were undoubtedly cured even by the low operation, but that a considerable number of recurrences took place is demonstrated by my experience during ten years at the City of London Truss Society, where I saw many patients with recurrences after operation for femoral hernia Most of these had been subjected to the low operation The high operation seems to be followed by fewer recurrences, though the technique employed is somewhat more difficult Usually the opening is closed by suturing the lower edge of the internal oblique muscle to the ligament of Astley Cooper I have found useful a modification of this method which consists in turning down a flap of aponeurosis from the internal oblique layer of the anterior rectus sheath, which is sutured to the ligament of Astley Cooper The tissues concerned are then not under any tension, and permanent cure is more likely to result, especially when the opening of the crural ring is rather large

The operative risk in dealing with femoral hernia is negligible in competent hands The high operation, however, demands, as already stated, somewhat greater technical skill than the older operation There is a greater risk of injury to the femoral vein, resulting in hæmorrhage or thrombosis, and when the hernial sac is being removed flush with the peritoneal cavity it must always be remembered that a corner of the bladder may be adherent to the mesial side of the neck of the sac All tissue must therefore be carefully stripped off it, since, if the bladder be included in the ligature, the consequences may be most serious, and the patient may, indeed, lose her life

Among the patients seen at the City of London Truss Society it was noticeable that many of those with recurrent hernia had been operated on for strangulation It is clear, in fact that recurrence after the relief of a strangulated hernia is very frequent, and this is to be attributed to the prevalent practice of cutting the lacunar ligament before reducing the hernia This procedure is, however, quite unnecessary and is to be deprecated If the high operation advocated above is being performed, the strangulation can be relieved and the hernia reduced after a small nick has been made in the anterior wall of the crural canal This divides only fibrous tissue in the neck of the sac and does no material damage If the operation is being performed under local analgesia the usual steps for the cure of the hernia can be carefully carried out exactly as when the strangulation is not present

It is very unusual for a femoral hernia to attain the large dimensions often seen in inguinal hernia. When this does occur, strangulation is unlikely to follow, so that the danger to life is small It may, however, cause great inconvenience and disability It can be successfully cured by means of a fascial graft from the fascia lata of the thigh after the method of Gallie

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THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg Lt Comdr P J A The O Rourke is promoted to rank of Surg Comdr

Surg Lt -Comdr J C Gent to *St Angelo* for Malta Hospital

Surg Lt Comdr (D) A T Dalls to *Drake* for Plymouth Hospital

Surg Lts W W Simkins to *Courageous* J G M Nisbett to *Victory* for R N B , J B Bradbury to *Barham*, and J F Davenport to *Falmouth*

ROYAL NAVAL VOLUNTEER RESERVE

Proby Surg Lt P G Burgess to *Renown*

ROYAL ARMY MEDICAL CORPS

Lt Col A G Biggam, O B E , M D , F R C P , R A M C , to be Asst Professor of Tropical Medicine, Royal Army Medical College

Lt Col J J O'Keeffe, M C , M B having attained the age for retirement, is placed on retd pay

Maj W F C Martyn to be Lt Col

REGULAR ARMY RESERVE OF OFFICERS

Capt F W Oldershaw from Supp Res of Off , to be Capt

TERRITORIAL ARMY

Capt D C McC Battles, M B , R A M C , to be Dvl Adjt , 56th (1st Lond) Div vice Maj H G Peake, M B , R A M C , vacated

Lts W C Jack J Peter, A T Espp, and H Tomkin to be Capts

Capt T Wallace resigns his commn

MEDICINE AND THE LAW

Evidence of Blood Tests in Paternity Dispute

A MESSAGE from its Berlin correspondent, published in the *Times* of Dec 3rd, recorded a fresh instance of the use of scientific evidence of blood groups in criminal cases It stated that in the past few days two German courts, one at Stuttgart and the other at Meiningen, had sentenced a woman defendant to a term of imprisonment for perjury in alleging that a particular man was the father of her child The falsehood was disproved by blood tests which showed that the alleged paternity was impossible The new edition of Taylor's "Medical Jurisprudence," reviewed in another column explains that medical evidence can prove a negative in such cases If more frequent recourse has been had to this kind of proof in continental courts than in our own, the fact is not due to want of authoritative testimony but to the inability of our magistrates and judges to compel the parties to submit to a blood test An English court has been asked to order such an examination but has refused on the ground that it has no power to do so Thus it is left for the legal advisers to persuade, or for cross-examining advocates to provoke, the parties to undergo a voluntary test A like difficulty diminishes the value of the suggestion, made not long ago, that a blood test would conclusively determine whether or not a motorist had recently taken alcohol. The motorist can volunteer to undergo the test, for what it may be worth, he cannot be compelled It is possible that foreign police authorities and courts have more peremptory powers.

SPECIAL ARTICLES

THE USE OF CONVALESCENT MEASLES SERUM IN SCHOOL EPIDEMICS

By F. G. Hobson, D.S.O., D.M. Oxon., F R C.P. Lond.
HONORARY PHYSICIAN TO THE RADCLIFFE INFIRMARY AND COUNTY HOSPITAL, OXFORD

Familiarity with measles can never breed contempt, and increasing experience leads us to regard it with respect and even some anxiety. The disease recurs periodically in epidemic form and in its presence the problems connected with its management, mitigation, and treatment range from those which face the general practitioner in attendance upon individuals or family groups to those of the medical officer of health in charge of a city or district In the present communication the problems which face the school medical officer are considered and observations are made upon three epidemics in boarding-schools which are, from the epidemiological standpoint, semi-isolated communities.

A plea is justified for greater uniformity as regards the elementary data in text-books, fever manuals, &c., which at present show considerable and important differences in connexion with this common disease, and do not always clearly state whether the appearances of prodromal symptoms or of the rash is to be looked on as the diagnostic date Such differences lead to difficulty and confusion in view of the increasing practice of prevention and attenuation by the use of convalescent or adult serum.

Communicability.—It is generally held that in a typical case the disease is communicable during the prodromal catarrhal stage which lasts 4–5 days and until the cessation of abnormal mucous secretions This statement is common to most text-books and schedules, and attention is drawn to it for two reasons only .—

(1) Twice I have had cases of measles isolated from contacts on a morning temperature of 99° F. five days before the earliest appearance of a rash, only to find that the infection had been spread to the contacts Therefore it is wiser to consider that the infection *can be* transmitted at least *six days* prior to the rash and in the entire absence of any obvious catarrhal symptoms or Koplik's spots.

(2) The early infectivity has a bearing upon the question of immunisation by serum which is referred to later

The *incubation period* is usually stated to be 7–14 days, but I doubt whether I have seen any incubation as short as 7 days, and most definitely this period can be prolonged beyond 14 days—particularly, as I shall show later, if the prodromal stage is modified by convalescent serum The exact length of the incubation must usually be a matter of speculation since the day of exposure is so often obscure.

Quarantine—The usual period of quarantine (as an example, the Medical Officers of Schools "Code of Rules") is 16 days, and this I regard as a dangerously low and inadequate figure The quarantine should be 21 days The quarantine period should cover such a period of segregation from the date of exposure as will give time for the detection of the disease in the segregated person. On several occasions I have known the first prodromal rise of temperature occur on the 15th day after exposure, no rash being evident until five days later. The prodromal stage may be almost entirely absent, especially when serum has been given.

To sum up these observations, my view is that :—

(1) The infective stage of measles should be considered as commencing at least *six days* before the rash, and may be entirely unaccompanied by any detectable coryza, Koplik's spots or diagnostic feature, other than a rise of temperature.

(2) The incubation period of 14 days is too short, particularly if serum has been injected

(3) The quarantine period should certainly be 21 days since prodromal symptoms may be negligible, and in any case may not be evident until 15 days after exposure, the rash not appearing until the 20th day or even the 21st day; this is particularly true if serum has been injected.

Epidemic aspects—Recent studies of the epidemiology have brought to light certain facts of which the general public have little or no knowledge and with which we as a profession are but insecurely conversant. Particularly in relation to the spread of measles in a closed or semi-closed community such as a school is it important to recognise that even among the susceptibles some 30 per cent or more may escape infection This immunity or failure to be affected by the disease is natural or acquired by contact and is temporary. The importance of this fact is well brought out by illustrations later in this paper.

The appearance of measles in a school initiates a period of considerable anxiety for the medical officer in charge, with the foreknowledge that pulmonary or otological complications will probably develop in a small proportion of cases. These anxieties will be accentuated in relation to any known "delicate" susceptibles and in relation to all susceptibles should there be any coincident infection such as whooping-cough or a nasopharyngeal streptococcal infection in the school—to name only two infections common to school life

Prevention of complications by means of convalescent or adult serum was considered to have played some part in the London measles epidemic 1931–32. It is pertinent, therefore, to consider to what extent and in what circumstances the use of serum is practicable, justifiable, and profitable in such epidemics in boarding-schools.

Emphasis is here laid upon the obvious impracticability of attempting mass prophylaxis or attenuation in a mixed school for day and boarding pupils in which, in the presence of an epidemic, any isolation or accurate control of the movements of the pupils is impossible While it may well be advisable to arrange for the "protection" by serum and subsequent isolation of delicate individuals, any attempt at mass prophylaxis or attenuation is foredoomed to failure in any such "mixed school."

The recommendations of those with greatest authority in this sphere of medicine may be briefly summarised as follows. Complete protection should be given. (1) to all patients who are weakly or debilitated, (2) to those suffering from any serious intercurrent disease, infectious or otherwise; and (3) to all children under three years of age whatever their condition of health. In connexion with school work condition three is inapplicable

Attenuation—After the age of three, the physical state being satisfactory, it is desirable to aim at a modified attack should circumstances permit, since this is stated to confer a permanent immunity. There is the further alternative, possibly the only one in certain circumstances, of permitting the epidemic to take its course when suitable medical and nursing accommodation is available Considerations which add difficulty to the decision as to the course to follow in a boarding school are the following :—

(1) A school is a relatively large unit, segregation of the members of which can never be exact

(2) The immunity given by serum lasts only a few weeks, whereas the susceptibles remain together for approximately twelve weeks, and each generation of infection re-exposes the susceptibles on a falling tide of immunity

(3) The consent of all parents may not be obtainable, and the presence of "unprotected" individuals among susceptibles whose "protection" is of limited duration may frustrate any prospects of success

The above factors are common to any boarding-school, and on theoretical grounds any attempt at mass prophylaxis might reasonably be condemned out of hand It is therefore of some interest to see how such an attempt did in fact work out Three epidemics in two different schools are considered in relevant detail, and offer contrasts in the use of convalescent serum and suggestive evidence as to the reduction of complications and the importance of the development of latent immunity in epidemic measles in such communities

Convalescent Serum in Three Epidemics

Fig 1 illustrates the 1929 epidemic in School A The number in the school was 56, 20 had already had measles so the number of susceptibles was 36 The results are seen in Table I

TABLE I —*School A* (1929) *Thirty six Susceptibles*

	No	Measles	Escaped
Unprotected	36	36	0
Protected	0	0	0
Total	36	36	0

100 per cent infected, 0 per cent escaped, 6 complications (otitis media, 3 cases, broncho-pneumonia and otitis media, 3 cases)

The high incidence of complications (16 6 per cent) was attributed to overcrowding and inadequate spacing of beds with consequent cross infection The infection from the cook was introduced into the school as the result of an illegal visit of two boys to the kitchen

Fig 2 shows epidemics in School B in 1930 and 1934 In 1930 there were 121 children in the school, of whom 53 had already had measles The numbers affected are seen in Table II In 1934 there were 99 in the school, of whom 48 had had the disease Table III shows the incidence

TABLE II.—*School B* (1930) *Sixty eight Susceptibles*

	No	Measles	Escaped
Unprotected	65	46	19
Protected	3	2	1
Total	68	48	20

70 per cent infected, 30 per cent escaped, 1 complication; 2 protected children who developed measles had modified attacks

TABLE III —*School B* (1934) *Fifty-one Susceptibles*

	No	Measles	Escaped
Unprotected	2	0	2
Protected	49	10	39
Total	51	11*	41

20 per cent infected 80 per cent escaped 0 complications 10 protected children developed measles and 6 of them had modified attacks

* One boy stated to have had measles and therefore not protected by serum developed measles, possibly a second attack

In Figs 1 and 2 the date of admission to the sanatorium is the date recorded, in most instances this date represents the detection of prodromal symptoms—pyrexia, catarrh, Koplik's spots, &c, and to this extent anticipates the date of appearance of the rash

DISCUSSION

While the danger of drawing conclusions from a few observations is fully appreciated, it is fair to assume that limited data collected under careful supervision may be of greater value than more extensive data less carefully supervised, and while the number of variable factors to be considered in any epidemic must be great, in the three epidemics illustrated emphasis may fairly be laid upon the factors common to these epidemics (1) The diagnosis, treatment, and management were in the hands of the same medical man (2) The nursing staff was adequate and competent and every facility was available (3) The epidemics occurred in boys boarding schools under conditions which permitted only minimal contact with the outer world (4) The boys were drawn from the professional classes and may be regarded as a good sample of such a population (5) The three epidemics occurred in the months of May, June and July, a season not commonly associated with nasopharyngeal and respiratory infections, and no such infection was obviously present prior to the appearance of measles

TABLE IV —*Serum Administration*

Date	Inoculated	Days after exposure	No	Source	Measles	Escape
May 12th	43	5th–8th day	32	O_1	7	25
			8	L	0	8
			3	W	0	3
May 14th	1	7th–10th day	1	S	0	1
May 15th	3	8th–11th day	1	W	1	0
			2	S	2	0
May 29th	2*	1st–8th day after 1st generation	2	O_2	0	2
Total	49				10	39

O_1 = Serum from adult one month convalescent from measles
O_2 = Serum from adult one week convalescent from measles
L = Serum from Dr Nabarro (London)
W = Serum from Dr Dyke (Wolverhampton)
S = Whole blood (10·0 c cm) taken four days after defervescence of temperature from initial case

The variation in date of inoculation of susceptibles was due to delay in obtaining parents consent, &c

*1 boy of the three not originally inoculated 1 boy returned late to school

TABLE V —*Course of Epidemic*

Date	Cases	Total	Generation	Comments
May 7th	1			Initial case
May 20th	1	3	1st	Normal course Prodrome 5 days
May 27th	1			Explosive development of rash No prodrome
May 29th	1			Normal course
June 9th	1*	3	2nd	Normal course
June 12th	2			Attenuated attacks
June 25th	1	2	3rd	Attenuated attacks
June 28th	1			
July 9th	2	2	4th	Normal course

* Stated to have had measles and not therefore *protected by serum, possibly therefore a second attack*

School A (1929).—This epidemic ran its course and all susceptibles were attacked, the two generations being fairly well marked. The complications were disappointingly high and severe (16·6 per cent.) and in discussion later with Dr. Alison Glover of the Board of Education, the suggestion was made that the distance between beds had been inadequate and that in consequence cross-infection of nasopharyngeal flora had occurred. In the disorganisation inevitable in a school epidemic, there is liable to be overcrowding in dormitories or sanatorium, and the statutory distance of six feet between beds had definitely *not* been observed. In the presence of an epidemic, this spacing precaution should never be forgotten, however inconvenient its practice may be. It is probably the most important single factor which can be kept under direct control in the prevention of complications by cross-infections. In family, school, and hospital practices when accommodation is under pressure in epidemic illness there is the tendency to allow the distance between beds to diminish on the plea that the occupants are suffering from the *same* disease. Such practice may be a domestic convenience but is a grave source of danger to the sufferers, and every possible endeavour should be made to ensure that a patient is secured from cross-infection from a neighbour by means of adequate spacing or shelter in the form of partitions.

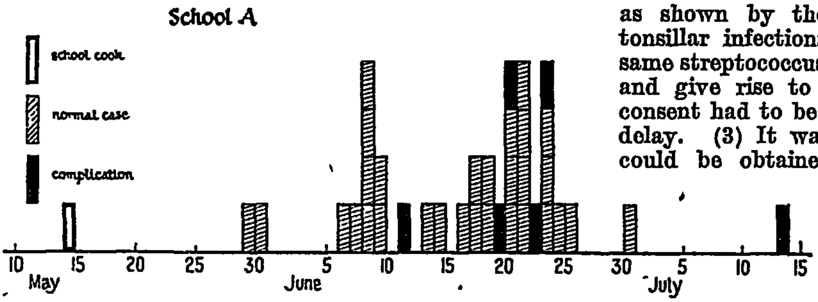

FIG. 1.—Measles in School A in 1929.

School B (1930).—Dr. Glover's recommendation as to spacing was rigidly observed and to this largely I attribute the fact that there was only one complicated case, a severe broncho-pneumonia. Protection by means of convalescent serum obtained from Dr. D. N. Nabarro was given to three especially delicate boys: two had minimal attacks, one escaped. No further attempt to influence the course of the epidemic was made, and yet it is to be noted that 30 per cent. of the susceptibles escaped.

School B (1934).—A case of measles developed on the fourth day after opening school, the rash appearing on the first day after isolation in the sanatorium, thus giving four full days' exposure to 50 susceptibles. It was decided to attempt mass prophylaxis about the sixth day after exposure, and to aim at attenuation. This decision was influenced by the following considerations. (1) In the Easter term there had been an epidemic of whooping-cough and five cases complicated by broncho-pneumonia, while independently there had been evidence of an active streptococcal infection as shown by the occurrence of acute sinus and tonsillar infections and it seemed likely that the same streptococcus would be resident in a few throats, and give rise to complications. (2) The parents' consent had to be obtained, necessitating a few days' delay. (3) It was problematical how much serum could be obtained since there was no public or commercial supply.

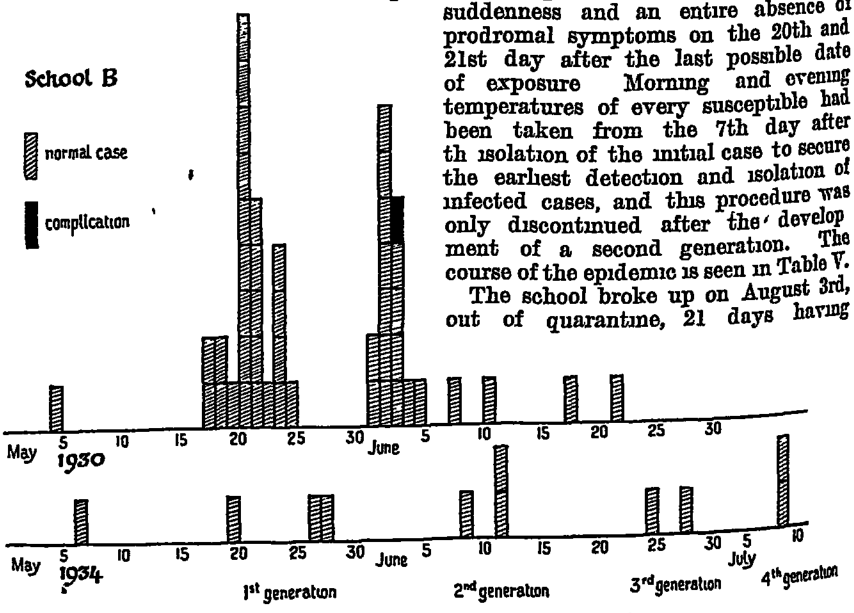

FIG. 2.—Measles in School B in 1930 and 1934.

By the kindness of Dr. Nabarro and Dr. S. C. Dyke, a limited supply of serum sufficient for 12 boys was obtained, the serum for the remainder being obtained from volunteer donors recently recovered from measles. Of the 50 contacts serum was refused by the parents of 3 boys, but at the same time the parents offered to remove 2 boys over the period of the first and second generations in order to avoid prejudicing the outcome of the experiment. These boys later returned to school and escaped measles. The third boy remained in the school and was given serum after the appearance of the first generation; he escaped measles.

The facts are set out in Table IV.

The uniform dose given was 6·0 c.cm., a few very small boys getting 5·0 c.cm., and a few very large boys getting 8·0 c.cm. This absorbed all the available serum. These doses are slightly less than those recommended by Nabarro, who states that protection is usually secured by administration before the sixth and attenuation if administered from the sixth to the ninth day.

All three boys inoculated on May 15th (8–11 days after exposure) developed measles in its normal vigour, and constituted the first generation. One case with the usual prodromal temperature and Koplik's spots for five days, during which period he was isolated before producing the rash, the remaining two developed the rash with explosive suddenness and an entire absence of prodromal symptoms on the 20th and 21st day after the last possible date of exposure. Morning and evening temperatures of every susceptible had been taken from the 7th day after the isolation of the initial case to secure the earliest detection and isolation of infected cases, and this procedure was only discontinued after the development of a second generation. The course of the epidemic is seen in Table V.

The school broke up on August 3rd, out of quarantine, 21 days having been observed from the appearance of the last two cases.

Comparing the two epidemics of School B 1930 and 1934, these have the following common features (1) The initial case had in each epidemic been in contact with the available susceptibles for four days before isolation and the rash developed the day following isolation (2) The season of the year was identical and no coincident infection present in either case In 1934 the use of serum altered the percentage of escape from 30 per cent to 80 per cent and the 20 per cent who were affected escaped any complications (Table VI)

TABLE VI

Year	Total	Susceptibles		Measles	Escaped and per cent.
		Unprotected	Protected		
1930	68	65	3	48	20 (29 4 %)
1934	51	2	49	11*	41 (80 3 %)

*Includes one boy stated to have had measles two years previously and possibly second attack

COMMENTS

In the first place it is important to state that the outcome of the experiment was contrary to expectation and intention The expectation on the basis of the 1920, 1930 epidemics was that in 1934 there would be two well marked first and second generations followed by a minimal third generation and that the epidemic would then die out The intention was to attenuate the disease in those infected, thereby diminishing the risk of complications and ensuring that a permanent immunity to measles was secured To attain this end the sixth day approximately was selected as the day of injection and 1 0 c cm of serum less than recommended by Nabarro was employed Complete protection from measles was not the object of the experiment, such a practice having no merit whatever, either from the point of view of the individuals or of the school concerned The only exception of course being in the case of specially delicate boys or boys suffering from intercurrent illness who should be given complete protection by serum and then isolated from further contact In the 1934 epidemic no boys were in this category, nor was there any coincident epidemic infection

The failure to achieve the desired result can be explained in two ways —

(1) That the serum employed was unusually potent in immune substances and its action lasted longer than the three to four weeks which is usually considered to be the limit of its effect As pointed out above the dose given was on the average 1 0 c cm less than recommended by Nabarro to secure attenuation and was given on the average six days after exposure

(2) That the passive immunity due to the serum was appreciably increased by the acquisition of a natural immunity due to the exposure of the susceptibles to minimal doses of the virus at convenient intervals The knowledge that an epidemic was in progress led as always to the early detection of infected cases and the passive immunity due to the serum in many instances shortened or eliminated the prodromal stage in those who succumbed thereby reducing their infectivity

The wisdom or otherwise of the practice of mass prophylaxis or attenuation in boarding-schools is open to debate from many points of view, however desirable the prevention or attenuation of the disease may be in the case of selected individuals for special reasons of personal delicacy or temporary ill-health Mass protection is obviously to be condemned for the reasons given above, in the absence of coincident epidemic disease Mass attenuation is obviously a desirable end from the standpoint of the individual and the school, but is it feasible ?

The following difficulties present themselves in the attempt to realise the desirable end of attenuation —

There is at present no method of estimating the potency of the serum employed whether convalescent or adult The data as regards doses are therefore empirical

The practice recommended by various authorities is not uniform To quote two only One authority (L C C. public health department) recommended (1) "the serum should be administered in the first three days after the earliest known exposure, the earlier the injection is made the more likely is complete protection to ensue", (2) "attenuation may be achieved by injecting the serum on the 4th–7th days after exposure" Another authority (Birmingham public health department) recommended the administration of the appropriate dose of serum for protection or attenuation "to the contact on the day of the appearance of the rash in the patient"

From every point of view, the appearance of the rash is a sounder basis of calculation than the "date of exposure," which as pointed out earlier in the paper may be six days previous to the possibility of diagnosis

To the plea for greater precision and uniformity in standard works as regards the basic data of communicability, incubation, and quarantine, is added a further plea for greater precision and uniformity in the practice of the serum therapy of measles

Supply of serum.—Since the therapeutic administration of serum for protection or attenuation must be prompt to be effective, and since its preparation from suitable donors requires both time and care, a supply must be available in each locality There is at present no central authority or commercial channel through which a supply of such serum can be obtained, and such a service must depend on local initiative

In view of the importance and proved value of serum therapy in measles, the supply of this serum should be as in the case of other preventive sera, a responsibility of the public health service in each locality, but few local authorities have given attention to this problem Only as the result of a special endeavour was sufficient serum obtained for the purpose of the present experiment

Conclusions

(1) Three *epidemics of measles in boys'* boarding-schools *are* compared and the evidence suggests the importance of adequate bed spacing in the prevention of complications due to cross infection (2) Convalescent measles serum protected 80 per cent of the exposed susceptibles although attenuation only was intended (3) The routine use of convalescent measles serum in schools is not recommended since this will only postpone the disease and it is undesirable that boys from preparatory schools should *move on* to their public schools "*epidemiologically innocent*" Circumstances may exist, however, such as the coincident presence of another epidemic in which the use of convalescent measles serum may be considered justifiable and advantageous in *reduction of the severity of the disease and of the development* of complications

CORRESPONDENCE

LONDON UNIVERSITY AND ITS MEDICAL SCHOOLS

To the Editor of THE LANCET

SIR,—A member of the teaching staff of a medical school and a registered student whose first acquaintance with London University was made through the final M B., B.S examinations, having contributed their several replies to the questions raised by Sir Ernest Graham-Little, perhaps a general practitioner who falls into Sir Ernest's class of university students who do not take the final examination may be allowed to put forward his experience

It was my fate between the years 1919–24 to beat A Registered Student's "achievement" hollow, in relation, not to the final examinations, but to the first and second M B 's, as they were then popularly known. As I had good reasons for not desiring to remain in the medical school as distinct from the hospital longer than I could avoid, I found that the examination in anatomy and physiology of the Conjoint Board provided a way of escape into the wards Although, after passing this examination, I did actually go straight into the wards, some months later I managed to satisfy the University requirements of the second M B examination I had done no reading worth talking about before going up and after passing the Conjoint examination, and certainly no practical work in the subjects concerned, being fully occupied in my first hospital work When I had finished all the hospital appointments required, not only for the final Conjoint examination but also for the final University examination, I found that sufficient time had elapsed for me to be eligible for the former, which I took in bits, but that, owing to the longer interval between the second and the final examinations demanded by the University and the late date at which I had passed their second examination, a year's further hospital work was required before I could take the M B, B.S In my case therefore the financial calculation in your leading article of Dec. 1st did not apply: I had already paid all the fees of both the Conjoint Board and the University except those for final examination, having paid when taking the second Conjoint for exemption from their first examination, on the strength of having passed the University first examination

My choice therefore lay between taking the Conjoint final, or living for another year in London hanging round a hospital wherein I had already held all the appointments a student could hold, in order to take the University final. A very simple calculation showed that the fees for the final Conjoint would cost less than a year's living in London, with no visible means of support. The student who takes the Conjoint final for 40 guineas probably feels that this is cheaper than living in London until the University will condescend to examine him

In my day the factors mentioned in the two letters you publish to-day all applied: the University demanded a knowledge of certain subjects out of all proportion to their relation to and importance in general practice. Although it is probably true, as A Registered Student says, that the General Medical Council do not look upon the final M B, B.S of London as a post-graduate qualification, it is difficult to avoid the conclusion that the University does otherwise, why is this examination still what it was in my day, so markedly different from the Conjoint final and from the bachelorate degree examinations of the other universities? It would in 1924 have been true to say, and A Registered Student's letter shows that it is still true to say, that in actual fact the final M B, B S. examination of London can more fitly be compared with the final F R C.S. of England than with any other examination In the one case the examining body demands a period of two years after qualification before the examination can be taken; in the other the vast majority of candidates find it advisable to allow at least this interval before they submit themselves One of my contemporaries who desired to specialise in surgery took his examinations in this order: Final Conjoint, B.S, Final F.R C S, M B. He only wanted the M B. so that he could go on to the M S., which was his last examination

He belonged to a large class of men to whom the M.B., B S is of some real use: men who wish to specialise or who enter a service where post-graduate qualifications are of value Except to a F R C S. who is in practice near a cottage or other small hospital post-graduate qualifications are of no use to the general practitioner: the majority of London University students are destined for general practice and find that the University training with the Conjoint qualification is adequate to their requirements. After they have qualified what they need is experience of general practice, not further hospital work which they have to undertake before they can sit for the M B, B S.

It is very kind of Sir Ernest Graham-Little to offer us some academic recognition of having done three or more years' university work and having passed an examination roughly equivalent to the B A; but in my opinion that recognition should take the form of giving the B A degree to everyone who has passed or who passes the second M B., B S. The subjects taken in that and in the preceding examination may be scientific in a sense, but they are not sciences in the sense that pure physics or chemistry or mathematics are Their applicaton to surgery, medicine, and obstetrics is an art; the daily practice of our profession, whatever our individual métier, is certainly the practice of an art and not the pursuit of a science And the passing of London University examinations in professional subjects, even if we have not taken the final M B, B.S, is certainly an art unrelated to any known science.—I am, Sir, yours faithfully,

C T. NORRIS

Manea, March, Dec 15th.

To the Editor of THE LANCET

SIR,—In the correspondence arising out of Sir Ernest Graham-Little's letter, I think you may like to have the views of a secretary of a medical school I have come to the conclusion, after a long experience, that the reasons why so many students fail to complete their course for a London degree are mainly as follows:—

(1) *The disadvantage to the student of having to take the whole of his examination at one time*—At present a London student cannot take *any* part of his final examination until he has been at hospital for three years. In this respect he is at a distinct disadvantage compared with the Cambridge man who takes his surgery and midwifery after two and a half years, and with the Oxford man who can take his forensic medicine and pathology separately after two years' hospital work

(2) *The inclusion of forensic medicine and hygiene in the final examination*—So far as most students at London medical schools are concerned the London M B. examination is the only final examination in which forensic medicine as a full subject is included, and failure in that subject means failure in the whole section of the examina-

tion which includes medicine, pathology, and forensic medicine

(3) *The interval between a diploma qualification and the earliest date at which the final M B examination can be taken*—By the time a diploma has been obtained, many parents have almost exhausted their financial resources, and the opportunity of earning money is eagerly seized upon by the student It is absolutely essential that this intervening period should be reduced as much as possible as a student very quickly gets out of training for examinations, and in many cases never really regains the necessary state of concentration for the purpose

To overcome these, to my mind, disadvantages, I would suggest —

(1) *That entry for the examination in surgery obstetrics and gynæcology should be permitted (as at Cambridge) after a student has completed two and a half years of hospital work*—At this time in their clinical work students are quite prepared for such an examination and the passing of it then would encourage them to such an extent that the majority would be certain to work hard to complete their degree examination six months later Many students feel that they must either take the whole examination on the first possible occasion, or obtain an appointment, but the prospect of taking five subjects at one time is felt by most of them to be too great a task (especially after they have already worked up and passed most of the same subjects for their diploma examinations) and the danger, a very real one, is that they gradually settle down in practice without their degrees

(2) *That forensic medicine and hygiene should be a separate examination which could be taken at the end of the second year of hospital work*

(3) *That candidates who pass the second M B examination in July should be allowed to take their final examination in the May next but two following*—As the second examination is held early in July, and the May final examination goes on into June, this would not be a great concession but the present interval (from the April diploma qualification to the November final degree examination) from April to November is a very critical period, and many leakages occur because of it Incidentally the Oxford final examination can be taken after 33 months of hospital work

If these alterations were made I feel convinced that an improvement in the present state of affairs would commence almost at once, and that in a few years the proportion of those who complete their London medical degrees would be at least as high as the corresponding figures for Oxford and Cambridge

With regard to Sir Ernest's suggestion for the institution of a new degree after a three years' course while it would undoubtedly appeal to some of the best students, I fear that if the standard of the first and second examinations were raised the majority of candidates would give up all idea of obtaining a degree

In the original letter it was stated that the number was alarmingly small of students who completed, compared with those who commenced, courses for medical degrees At this school the entries of London degree candidates for the ten years 1919–1929 have been analysed with the following results —

(a) Completed their London M B, B S Degrees	51%
(b) Diploma qualification only (up to present time)	48%
(c) Did not proceed to any final examination	1%

I am, Sir, yours faithfully,
S. C. RANNER
Secretary, King's College Hospital Medical School
Dec. 15th

To the Editor of THE LANCET

SIR,—That extraordinary mental marathon race, the final London M B, B S examination, is much in the public eye at the moment It is in the hope that those who are revising the London University medical curriculum may be interested to know the views of a candidate that I jot down what follows

The London M B lasts 25 days It includes 7 papers, 1 practical examination, 4 clinical examinations, and 6 viva voces (2 of which consist of 2 parts, hygiene and forensic medicine, and midwifery and gynæcology) The candidate for the complete examination has to have a fairly comprehensive knowledge of the following subjects —

General Medicine, including Neurology,
Dermatology
Psychiatry, and
Pædiatrics
General Surgery, including Anatomy,
Operative Surgery
Oto rhinology, and
Ophthalmology
Pathology, general, special and chemical
Bacteriology
Hygiene and preventive medicine
Forensic Medicine
Toxicology
Midwifery, Gynæcology, and Infant Welfare

To carry this enormous amount of information in the head at one time is a feat which can be achieved in one way only—by concentrated cramming The candidate must certainly have a sound clinical knowledge as well, but to be able to write an adequate answer to every possible question in our seven papers necessitated, in my case at any rate an almost complete cessation of clinical studies for two months I feel proud to *have had* the knowledge (I have already forgotten much of it) to have passed the London M B, but I am certainly not a better doctor for having done so

A candidate whose practical experience is far greater than mine, and who has a really sound *general* knowledge of medicine, has just failed the whole examination for the second time It has wasted one year of his life since qualification The reason for his failure was an inadequate book knowledge Until two months before the present examination, he had been forced, for financial reasons, to do locums Imagine the poor fellow's feelings!

In my opinion, London can learn much from Cambridge The M B should be taken as a routine in two parts It should be possible to take the surgical half two to two and a half years after the Second M B, just after one has passed the Conjoint Midwifery and Surgery The medical half should be taken six months later, when the Conjoint Pathology and Medicine have been disposed of Finally, the successful candidate should have to write a thesis.

The late Lord Grey's remark about the Germans—that they have an incomparable knowledge of facts and an incomparable ignorance of the meaning of them—may, with an element of truth, be applied to the successful London candidate Medicine contains an almost infinite number of facts For my own part, I would far rather be able to correlate two of them to produce a third of importance than know the lot The value of a graduating thesis is not that it adds to science but that it teaches the writer to think for himself—a feature all too rare among London students.

At present, there are three reasons why the average man takes the whole M B at once The first is financial If there is the faintest hope of passing the whole at a single shot, and thus avoiding six months profitless swotting which would otherwise be spent in house appointments, any man will take the chance The second and third appeal to the cupidity of the better candidates—the hopes of honours and the gold medal It is perhaps reasonable that the super man who gets the gold medal should have to take the whole examination at once But why not give honours where they are due, even if the recipient does not know all about some entirely different subject? The examination should take as its standard the ordinary man, and not the brilliant exception

I hope that it will not be thought that my views are entirely due to examination jaundice and "sour grapes," since I myself obtained only one distinction. My failure to obtain more was entirely according to my deserts. Nothing could be fairer than the conduct of the examiners Even to the bitter end they remained charming. The intense physical and mental strain of 25 days (including Saturday afternoons) of concentrated brain-testing must be almost as trying for them as for the candidates.

I am, Sir, yours faithfully,

Dec. 15th. A SUCCESSFUL CANDIDATE.

To the Editor of THE LANCET

SIR,—A strange statement appears in Prof F J. Browne's letter in your last issue. He suggests that forensic medicine and public health are academic subjects with little relation to daily experience in general practice, and that the examinations in these subjects should be taken (say) at the end of the fourth year. I cannot speak for forensic medicine, although I should have thought it a highly practical subject, affecting the daily work of many practitioners. But it is the reference to public health which surprises me, for it would be hard to think of a subject which is less academic. It is usually taught, both in London and the provinces, by men engaged in the public health service, and the teaching puts emphasis not only upon the application of scientific knowledge to the prevention of disease, a matter surely of great practical importance to every medical man and woman, but also upon the machinery afforded by central and local governing bodies for securing that such knowledge is applied in an organised way. With these bodies the general practitioner has to work in the closest coöperation to an ever-increasing extent. To relegate this part of the student's training to a stage of the curriculum when he is hardly capable of understanding the terms used, and, by inference, to suggest that the knowledge imparted has little or no bearing upon his future work, would be a peculiar act in these post-war days of State medicine.

I am, Sir, yours faithfully,

Cardiff, Dec 17th RALPH M. F. PICKEN.

*** Stimulated by this correspondence our contemporary, *Guy's Hospital Gazette*, has made an interesting analysis of the record of men entering Guy's during the period 1920 to 1926 with the intention of studying for the M B. Out of a total of 293 only 110 completed the degree although 86 passed the second M.B The *Gazette* remarks that this is a very large proportion in view of the fact that the final M B is probably no more difficult in itself than the earlier examinations The reason given for the defection is that after passing the final Conjoint the M B candidate generally takes a series of house jobs, and having completed these, he is disinclined to sit down and relearn a great deal of material which he believes will not be useful to him in his future work. The remedy suggested by the *Gazette* is to give the London student the same liberty as his Cambridge colleague to take half his final examination two and a half years after entry to the wards. Having completed part of his final before taking a house appointment the stimulus to complete the M B. would be much greater.—ED L.

THE REBUILDING OF ST. GEORGE'S HOSPITAL

To the Editor of THE LANCET

SIR,—An appeal for funds is being made to rebuild St. George's Hospital. It is to be hoped that it will be successful, but the question then arises where it is to be rebuilt. To remove the hospital would be to leave London from Charing Cross and Westminster to the West London Hospital at Hammersmith—a matter of three miles or so—practically without a large hospital to minister to its wants

It may not be out of place to bring before the medical profession and old St. George's men some of the aspects of a very controversial matter An expensive site in a bad position near Hyde Park Corner will not meet the requirements of the case. To go to the suburbs would be fatal. In both cases legacies and subscriptions would infallibly be lessened

St. George's has always been pressed for room. In the seventies of last century Mr. George Pollock, one of the surgeons, wanted the hospital to buy two of the adjacent houses; the price was then a very low one—£3600. The weekly board did not do this, and much later four houses in St. George's place had to be bought at a price of £64,000 Late in the last century and early in this one proposals were made to endeavour to sell the site and move the hospital elsewhere. Although most of the house committee and the two senior members of the medical staff were in favour of this scheme as was also Lord Plymouth (treasurer) and the deputy-treasurer, Mr William West, at a very large meeting of the governors it was rejected by a large majority, including all the members of the staff (some 28) except two It was pointed out that St George's lived on its legacies; that the hospital got them because of its prominent position at Hyde Park Corner, near which so many rich people lived, and that its position near the open parks could hardly be bettered, that the results obtained at the hospital were equal to those of any other hospital; and that the site—being held partly by the governors (one-third), partly by the governors and the Duke of Westminster on a peppercorn rent so long as the building on the site was used as a hospital (one-third), and the remaining one third by the Duke—could only be sold for an adequate sum with very great difficulty. The first Duke of Westminster with characteristic generosity later on offered, if he was able, to give up his rights to the share which he held with the hospital His death shortly after this offer was an irreparable loss to the hospital of which he was treasurer.

To allow those who wished to sell the site to have an object-lesson of the difficulties, those who were against the scheme offered to allow the site to be advertised for sale for a period of a year This was accordingly done and done again, but no adequate offer was made There was one of £300,000 but without sufficient security, and the suggestion of removal did the hospital and medical school much harm. Various minor improvements (kitchens, out-patient department) were made, but schemes for amalgamation with Westminster, the parent hospital, and with University College Hospital came to nothing. In 1916 there was a question of rebuilding of the hospital on its present site and Mr. Adams, the architect, made plans and drawings with this in view, but on the ground of expense nothing eventuated. After the war the present joint treasurer, Lord Greville, wrote to the *Morning Post* that all idea of removal had been finally given up.

St George's, like other hospitals, has felt the bad times and there has been and still is a huge overdraft, but it has been saved once again by legacies. The medical staff recently would not accept any diminution of the number of ordinary beds and the increase of paying ones as suggested by the treasurer, so this possible method of balancing accounts has not been adopted Of late years there has been much talk of selling the site and moving the hospital elsewhere, in fact, the house committee by the treasurers went so far as to pay £1000 for the option of a site for a year This money, of course, has been wasted, and it seems to me that the treasurers and house committee were hardly in order in their procedure They are only empowered to spend up to £1000 without consultation with the governors on alteration or repair of the building—not for the option of a new site No such consultation was taken in this case; in fact, there had been no general court or meeting of the governors to consider removal since the pre-war meeting when by a large majority they decided against removal, although the then treasurer, deputy treasurer, and a large number of the house committee advocated this course

At the meeting of a court of governors on Oct 31st, 1934, a resolution was carried to rebuild St George's Hospital on its present site "or elsewhere." Everyone admits St George's must, if possible be rebuilt—there is not room to do the work properly under its present arrangement Two more stories can be, if necessary, added to the hospital There are a great number of people who are against giving up its unique position and think that it would be bad *business* to do so Sentiment, too, is against removal, but that should not be considered except on the ground that Hyde Park Corner attracts a good class of student and a good class of nurse The present site appeals also to the numerous St George's men scattered throughout the country who will be most useful in collecting funds for rebuilding but who might not be so keen if their old hospital is to be removed elsewhere It would seem that only if St George's cannot be rebuilt on its present site it would be well to go "elsewhere," and then difficulties of upkeep will probably be very much greater

I venture to write as one who has served 50 years on the weekly board and house committee, who has served 30 years on the acting surgical staff, and has been consultant surgeon since 1918, was a member of medical school committee for 30 years, and for six years its chairman; who was for some 17 years a visitor for King Edward VII Hospital Fund, and has been a life governor of the hospital since 1880 To show I am no "diehard" in advocating the retention of the present site, I may mention that in the past I represented the hospital, both when an amalgamation with Westminster, and again when one with University College was on the tapis. Both schemes would have involved moving the site but both were impracticable.

I am, Sir, yours faithfully.

Hove Dec 12th　　GEORGE TURNER.

UTERINE CONTRACTION

To the Editor of THE LANCET

SIR,—A recent communication by Dr Chassar Moir, read before the Edinburgh Obstetrical Society (Edin Med Jour, August, 1934), impels me to raise through your columns a pertinent point which ought not to go unmentioned, especially as it bears upon an apparent discrepancy between his clear-cut results and the equally clear-cut results of Prof H Knaus, of Graz, whose work is now widely accepted the world over Moreover, Dr Moir's results challenge experimental data of Dr Willard Allen and myself, obtained under controlled experimental conditions in the unanæsthetised rabbit, in which we showed that potent extracts of corpora lutea exert a powerful *inhibiting* influence upon uterine contractions (Amer Jour Physiol, 1932, cii, 39) Recent unpublished data show that crystalline progestin is endowed with this property, 0 2 mg being sufficient to inhibit maximal œstrin induced contractions in five hours

It is surprising, therefore, to learn that Dr Moir finds evidence of spontaneous uterine contractions during the latter part of the menstrual cycle concurrent with the existence of a corpus luteum In the light of controlled experimental data, this circumstance, I feel, should cause one to look for other than hormonal factors as a cause of the discrepancy, and I submit, on the basis of Schultze's findings (Zentralbl f Gynäk, 1931, xlii, 3042), that the results of this investigator as well as of Moir are explicable on the basis of purely local, intra uterine factors Schultze found that in the early interval the uterus is so irritable that it does not retain well the lipiodol which is placed in the uterine cavity, but passes it up the tubes Later, after the mid-interval, the uterus is so sluggish that it becomes well distended with the oil The *necessary physiological consequence* of this is that if contractions occur spontaneously or if they be induced by sudden distension, mechanical (Schultze) or chemical (Moir) means, the length of the muscle-fibres of the uterus is so increased and the intrinsic irritability of the tissue so altered that relatively feeble contractions give a net recorded effect of considerable magnitude From this point of view the conditions in the latter phase of the cycle are not dissimilar from what one finds in the expulsive capability of a compensated heart I have recently witnessed an example of this After injection into a rabbit of 0 6 mg of crystalline progestin, which dosage in more than a dozen other rabbits effected *inhibition of motility* within two hours, the rhythmic contractions nevertheless continued, with increased force and a progressive loss of tone, so that after four hours the contractions exceeded the pre-injection motility by more than 200 per cent! At the end of this time, when the experiment was terminated it was found that the balloon had become weakened on one side, giving rise to an aneurysm As a result its capacity was increased at least fivefold It is evident, therefore, that the hormonal influence of the progestin was completely over ridden by alterations in the *physical relationship* of the uterus to the recording system

It seems possible, then, that a relatively high degree of tone in the early interval should *minimise* the possibility of intra uterine distension and so reduce appreciably the contractions recorded at this time This is what Dr Moir has found On purely physiological grounds the converse may be said to hold true, while there is low tone *associated with the* corpus luteum as Schultze reports

In conclusion, I should like to refer to Dr Pompen's excellent work (Thesis, Amsterdam 1933) in which he shows that the action of œstrin on uterine muscle is to *coördinate* otherwise uncoördinated contractions over the whole surface of the uterus The result of this action is to induce rhythmic *contractions* as I had found previously (Amer Jour Physiol, 1931, xcvii 708) It would appear then that the effect of progestin *is not to render the uterus quiescent* as I had suggested, but *rather to render uncoördinated* the rhythmic character of œstrin-sustained contractions of the uterine fistula in unanæsthetised rabbits —I am, Sir, yours faithfully,

SAMUEL R M REYNOLDS, A M , Ph D ,
Assistant Professor of Physiology
Department of Physiology and Pharmacology,
Long Island College of Medicine,
Brooklyn, N Y , Nov. 22nd

*** Dr Chassar Moir's paper was summarised in THE LANCET, 1934, i , 738, and his work discussed in a later issue (p. 1070) —ED L

INTESTINAL PARALYSIS FOLLOWING DIPHTHERIA

To the Editor of THE LANCET

SIR,—It would interest me greatly to know whether any of your readers have come across cases similar to those of which I append short notes. The physical signs were those of a well-marked post-operative ileus, and I think there can be little doubt that they were due to intestinal paralysis following diphtheria. The first case was much the most striking, although the others were quite as definite while they lasted.

CASE 1 —A boy aged 8½. Admitted to hospital on July 30th, 1934, with an indefinite and unsatisfactory history. It was said to be about the fourth day of illness. The throat was congested but there was no membrane. The nasal swab was positive There was severe paralysis of the palate, but of no other part On August 1st abdominal distension of marked degree was found to be present The distension was general, and it was tympanitic on percussion The bladder was not distended, and liver dullness was approximately normal There was no evidence to suggest dilatation of the stomach Partial relief was obtained by enema, but the distension promptly recurred Pituitrin ½ c cm was injected with no result Acetylcholine 0 05 g was then given, and another enema later. On August 2nd distension was still present, but was not so great An enema gave a poor result with much flatus It was not possible to say that the abdomen had returned to normal until August 9th, and enemata had to be continued until the 23rd Complete recovery followed

CASE 2 —Boy aged 5½. Admitted Oct 1st, 1934, on the third day of illness The throat was covered with membrane, and there was rhinorrhœa Toxæmia was evident The throat swab was positive On four occasions, Oct 16th and 29th and Nov 7th and 23rd, he developed abdominal distension, with exactly similar signs to the last case, and equally severe. He responded rapidly to enemata on each occasion, but these had again to be continued for some days before aperients became effective He also showed signs of intestinal toxæmia for some weeks, having a thickly furred tongue and a slight temperature which defied treatment He is still in hospital, but is getting up

CASE 3 —A boy aged 5 was admitted on Nov. 6th with patches of membrane on either tonsil, moderately ill The throat swab was positive. On Nov 9th he also distended suddenly and definitely, but an enema relieved him and there was no recurrence He was discharged well

I am, Sir, yours faithfully,
A E GAMMIE,
Medical Superintendent, Mogden Isolation Hospital, Isleworth
Dec 15th

TETANUS: A REQUEST FOR CASES

To the Editor of THE LANCET

SIR,—May I solicit the collaboration of your readers in a field of research? Our investigation of certain plant ingredients of curare has enabled my chemical collaborator, Dr Harold King, of the National Institute of Medical Research, to supply me with curarine in pure form. This is the alkaloid responsible for the classical action of curare in paralysing muscular activity. During the past 18 months the action of curarine on animals and on man has been under full investigation. There is one condition—that of severe tetanus poisoning—in which not only may curarine be an effective weapon therapeutically, but in which the drug may have to be given in large dosage. During the past year Dr. Leslie Cole, of Cambridge, has recorded his impression (THE LANCET, Sept. 1st, p 475) that crude curare given in small doses may assist cases of tetanus The advent of curarine has increased the possibility of large, accurate, and safe dosage in severe cases of the disease But if large doses are to be given, a means of artificial respiration must be available, in the event of serious weakening of the respiratory muscles. In a case in Oxford, which I saw and treated last April (by courtesy of Dr. Mallam), I put the patient into a Drinker respirator I think that the efficient and portable Bragg-Paul respirator would be the present choice

From time to time cases of tetanus, with symptoms arising within three or four days of infection, are such that a fatal prognosis can be made with little hope of error. I think curarine combined with artificial respiration may possibly save life in some of these cases. If any of your readers can assist me to see and treat such a patient, I shall be most grateful. I can reach cases within 100 miles of London or Oxford within a few hours of word being received at either of the addresses below. I shall have with me all the apparatus necessary for treatment, which can be undertaken in either a hospital or a private house

It should be emphasised that this treatment is still at an experimental stage Supplies of curarine are limited, the drug requires very cautious handling, and large dosage is only safe in experienced hands and only justified in severe cases.

I am, Sir, yours faithfully,
RANYARD WEST.

University Department of Pharmacology, South Parks road,
Oxford (Tel : 3562)
The Dreadnought Hospital, London, S E 10
(Tel : Greenwich 1881)
Dec 15th

SERUM PROPHYLAXIS AND PUERPERAL SEPSIS

To the Editor of THE LANCET

SIR,—I am fortunate in having induced so authoritative a critic as Dr Colebrook to discuss the suggestion that pregnant women should, in certain cases, be given streptococcal antitoxic serum prophylactically. It is to be supposed that his destructive criticisms are the most weighty that can be advanced, and the result is reassuring His criticisms of a method which he has not tried are mainly based on experiments which he has not performed with animals which are not susceptible to streptococcal toxin.

May I take his criticisms in their order? He asks whether I suppose that no one has hitherto considered the question. In my first letter (a short one) I pointed out that the proposition was old, and that, in fact, the method was in limited use He next, rightly, states that the pioneer work on the matter was done by Parish and Okell,[1] although I have no knowledge of the views of these authorities on the merits of serum prophylaxis in puerperal sepsis My assurance, however, is far from being based exclusively on their work I have myself continuously from 1928[2] to the present day confirmed on scores of rabbits their results with streptococcal strains from puerperal and other sources In my experiments, however, I have administered the serum either five minutes before or within one hour after the intravenous injection of living streptococci, and have found the animals in many cases to survive up to *six weeks* at which date they were killed When examined, they almost all showed, as Parish and Okell found, abscesses in the joints and serous cavities, especially the pleura, rarely the peritoneum, very rarely the pericardium Without antitoxin, living cultures or toxin alike kill, usually within 10 hours, almost always within 48 hours

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[1] Parish, H J , and Okell, C C.: Jour Path and Bact., 1927, xxx , 521.

[2] Pulvertaft, R J V .· (*a*) Brit. Jour Exp Path , 1928, ix, 277 , (*b*) THE LANCET, 1929, ii , 318 , (*c*) Westminster Hosp Rep , 1934, xxii , 218

These experiments are crucial The rabbit, especially as I first showed,[2a] the chinchilla breed, is the only animal known which resembles man in reacting both to the toxic and pyogenic action of the hæmolytic streptococcus The septicæmic patient including the puerperal woman, in a fatal case dies most often in the stage before abscess formation When pus forms, as Hippocrates knew, prognosis improves, though even then toxic damage is a factor and the surgeon now comes into his own and evacuates the pus To be effective, the antitoxin must be administered to the rabbit not more than one hour after the toxin or organisms, hence my insistence on prophylaxis I maintain that death in the pre abscess phase of human septicæmia is death mainly from toxin If that be true, then such death can be in part prevented by prophylactic antitoxin I am not seeking to prevent infection, no pyogenic antitoxin at present known will do that It will neutralise the toxin, the pyogenic effects will undoubtedly remain, though they may, I believe be limited But it is not pus that kills the septicæmic in most cases If I am wrong in thinking that early septicæmic deaths are toxic, there is no valid basis whatever for my suggested prophylaxis My opinion is not, however, based on a misinterpretation of old work, and ignorance of later work, as Dr Colebrook suggests, but on ten years' work in the post-mortem room and six years of experiment with streptococcal toxin

Dr Colebrook next states that I have overlooked work since 1928, I have, in fact, followed it very closely His first citation of such work is the inefficacy of Dick toxin immunisation in preventing infection by the hæmolytic streptococcus This is really irrelevant, because I am not, at the moment, advocating active immunisation, although the beneficial action of such a technique in the puerperium has been suggested by Burt White[3] It is far more to the point to say that prophylactic passive immunisation by antitoxin, in institutional epidemics of scarlet fever, is almost universal to day, and is undoubtedly effective in checking the epidemic But here again I repeat that the limitation of infection in childbirth is not my *objective*, it is the *lowering* of the death rate

He next quotes a singular paper by Penfold and Butler[4] on the inefficacy of antitoxic and other sera in protecting mice against hæmolytic streptococci The inefficacy of sera other than antitoxic is beside the point it agrees, however, with my experiments in rabbits But is Dr Colebrook aware that the mouse is practically immune to streptococcal toxin as was shown both by Hartley[5] and myself in 1928? The human being is susceptible, and to a degree incomparably greater than any animal, cases have been reported of severe general reaction caused by the accidental inoculation of one drop of concentrated toxin in the human conjunctiva in spite of immediate irrigation I have personally, after many experiments with puerperal and other strains abandoned the mouse as an experimental animal in streptococcal experiments, its susceptibility to individual strains bears no relationship to results in the rabbit, or clinical observation in man The experiments he quotes show clearly that the mouse is not protected against a substance to which it is not susceptible, it is doubtful whether this was worth proving

His next criticism is valid, a serum sensitive patient might quite possibly be hindered rather than helped, only experiment would prove the point in man, but how many women are in fact already sensitised?

His forthcoming paper on the injurious results of antistreptococcal serum in treatment will probably be the subject of discussion when it appears, but, as he himself states, it is without relevance to the present matter His question, "Have we any reason for believing that an agent which apparently is capable of harmful effects during the *early stages of an* established infection will have a directly opposite effect at the very beginning of such an infection?" is, however, also irrelevant I am advocating prophylaxis, before any infection, I have already said that my experiments on rabbits show clearly that antitoxic serum is valueless one hour after an intravenous dose of living streptococci.

I am reminded of a quite possibly apocryphal anecdote current during the war It was stated that, on the day on which the first Handley-Page aeroplane bombed Constantinople, a learned physicist forwarded his delayed report to the authorities, proving that the aeroplane could not leave the ground, and if it did would break up Dr Colebrook's criticisms are *made* within a short time of a communication by Dr G W Theobald,[6] whose suggestions on this matter long antedate mine, stating his confidence, as the result of experiment, in the efficacy of prophylactic serum, personal communications from obstetricians assure me that some, at least, are convinced of its value, and I myself have employed it with success in the prophylaxis of post-mortem room wounds Serum sickness will certainly result in many cases, but only experiment will show whether the saving of life will compensate for its minor horrors

All I am asking is that a reasonable suggestion based on experiment should not be condemned untried especially on grounds entirely irrelevant Perhaps those who are as yet unwilling to adopt this method of prophylaxis in an entirely normal patient will give it a trial in the case of any prolonged or instrumental labour

I am Sir, yours faithfully,

London Dec 17th R. J V. PULVERTAFT

NEW AGGLUTINATION RACK

To the Editor of THE LANCET

SIR,—I have devised a modification of the Dreyer type of agglutination rack, which consists in enlarging the holes in the lower shelf to the same size as those in the upper shelf and in raising the position of the lower shelf to only 1 5 cm below the higher one. When the Dreyer tubes are dropped into the rack, they are arrested by their flared mouths fitting the holes of the upper shelf

The advantages found in use in a large routine laboratory are 1 A saving of time in dropping in the tubes as no care is necessary to ensure their pointed ends sitting properly in the small holes of the lower shelf as in the usual rack 2 A saving of tubes, as there is no chipping or cracking of the pointed ends through hitting the shelf when being dropped in 3 An uninterrupted view of all the tubes is easily obtained.

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[3] Burt White H Brit Med Jour 1928 i 974

[4] Penfold, W J and Butler H M Med Jour Australia 1932 i 717

[5] Hartley P Brit Jour Exp Path 1928 ix 259

[6] Theobald G W Brit Med Jour, Nov 17th 1934 p [illegible]

The racks are obtainable from Charles Hearson and Co , or Baird and Tatlock and Co.

I am, Sir, yours faithfully,

B. R SANDIFORD, M.D.,
Chief Bacteriologist, Public Health Laboratories, Cairo
Dec. 1st

INSULIN HYPOGLYCÆMIA

To the Editor of THE LANCET

SIR,—Dr Cooke's interesting article in your issue of Dec. 8th (p. 1274) omits a comparatively rare symptom of hypoglycæmia which is so alarming that every practitioner who treats patients with insulin should be acquainted with it—namely, hemiplegia Either side may be affected, although my first three cases were paralysed on the left side

The sensations described by intelligent patients seem almost innumerable, and a number of patients state that they suffer from sensations which they are are unable to describe. The relative frequency with which my patients complain of hunger as a symptom of hypoglycæmia is very much greater than in Dr. Cooke's series. It has been my custom for several years to make the patients acquainted with the symptoms of hypoglycæmia by personal experience, before they leave nursing-home or hospital, but occasionally attempts have failed whilst the patient has been in an environment where a severe attack could be treated without giving rise to alarm and an attack has developed spontaneously weeks later. Although the majority of my patients have a recurrence of the same symptoms at each attack a few never know what to expect, and are similar to the patient Dr. Wauchope describes in your last issue

The main object of this letter is to draw attention to the fact that occasionally persistent hypoglycæmia develops, and then the decrease of ten units per dose, as suggested by Dr Graham and which suffices in the majority of cases, fails signally In those exceptional cases not only must all insulin be withheld, but fairly large quantities of carbohydrate must be given two-hourly perhaps for days until the sugar content of the blood has been raised to 0 20 per cent for six hours In these the cessation of the administration of carbohydrate leads to a fatal result—fortunately, these cases are very rare

I am, Sir, yours faithfully,

Portland-place, W., Dec 17th O. LEYTON.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

EDINBURGH CHAIR OF CLINICAL MEDICINE

THE University Court has accepted the resignation of Dr. Edwin Bramwell from the Moncrieff-Arnot chair of clinical medicine in order to set him free for other professional duties He has recently become president of the Royal College of Physicians of Edinburgh. The name of Bramwell has covered at least two generations in Edinburgh, and few names are better known in the medical profession than that of (Sir) Byrom Bramwell He found time to write a great deal about his clinical cases, and his "Atlas of Diseases" was one of the finest books of its kind. The younger Bramwell has specialised more than his father did, devoting himself largely to neurology. He will be much missed as a teacher

After consulting with the managers of the Royal Infirmary, the Court has appointed Dr Edwin Matthew to the chair from Jan 1st, 1935, the managers having agreed to continue his appointment as honorary physician to the Royal Infirmary to March 21st, 1936 Dr Matthew, who is an Aberdonian and recently succeeded Prof William Russell as representative of the Edinburgh College of Physicians on the General Medical Council, is known as one of the best clinical teachers in Scotland He was Ettles scholar at a time when this distinction entitled the holder to be resident physician with Sir Thomas Fraser, a brilliant teacher and discoverer who was highly exact and exacting in his ward work Dr Matthew passed under his discipline and the quality of his teaching showed it at every hand It is an open secret that the undergraduates wished the infirmary managers to prolong Dr. Matthew's tenure of office quite independently of this new development

WELFARE OF THE BLIND

The Department of Health has appointed the advisory committee on the welfare of the blind for a further term of office, to advise the department on matters relating to the care and supervision of the blind The committee is representative of local authorities in Scotland and of organisations and agencies for the blind, under the chairmanship of Ex-Bailie J M Rusk. The ophthalmic member is Dr. George Mackay, sometime president of the Royal College of Surgeons of Edinburgh, who has been associated with its work for over 20 years He brings to the service of the committee his immense experience as ophthalmic surgeon to the Edinburgh Royal Infirmary, the Royal Blind Asylum, and many other public institutions.

THE NURSES' HOME AT BANGOUR

The Lady Provost, in opening a new extension of the home for nurses at Bangour Mental Hospital, said that though all good nurses were born nurses, the mental nurse must be one who loves her neighbour better than herself. She must be prepared to think and act for her charge A great change had come over mental hospitals in the last half century, and the honoured place of Scotland was due in large measure to the increasing extent to which female nurses had been employed. With few exceptions all acute cases, male as well as female—being those that required the most skilful handling—were placed in the care of women The results justified what had at first been looked on as a risky experiment.

There have been several local outbreaks of diphtheria and the county authorities are making an endeavour to interest the parents in preventive measures In Forres (Morayshire) a councillor has put the pointed question. What is the use of closing schools while children are packed every night in amusement halls like herrings in a barrel? The question of Schick testing and immunisation is being canvassed

The Dean of Guild Court has disallowed the synthetic stone proposed for the new maternity hospital; but the managers of Edinburgh Royal Infirmary are taking the matter up with the court The saving on the use of ordinary quarry stone would be about £7000, and the managers are advised that the amenity of the city would not suffer from the appearance of the synthetic stone, which can be made to work harmoniously into the aspect of the building.

PUBLIC HEALTH

The L.C.C. Central Medical Staff

On Tuesday the Council was asked to accept a report reviewing the medical staff of its public health department in the light of experience of the working of the Local Government Act of 1929. The three positions of principal medical officer, now held by Dr. W. Allen Daley, Dr. W. Brander, and Dr. J. A. H. Brincker, are not in question. Besides these there are two area medical officers, three senior medical officers (in place of other area officers authorised), one senior medical officer for planning and development work, one (temporary) principal assistant medical officer, and one divisional medical officer. The position of the last named has hitherto been allocated to the special hospitals division, the holder acting as assistant to the principal medical officer in charge. Since the recent promotion of the last occupant of this position, these duties have been carried out by a senior medical officer transferred for the time from the general hospitals division. The suggestion is now to give this divisional medical officer the rank of senior medical officer (salary £1200–£1600). This proposal being accepted, the designation of chief medical superintendents in the infectious hospitals service will lapse with their present holders. The position of senior medical officer in the general hospitals division remains under consideration. The work in connexion with the medical examination of staff has not turned out exactly as anticipated. In February, 1931, it was decided that a special divisional medical officer should do this work, enlisting as required the services of consultants and specialists, in particular on the medico-legal side. At that time it was estimated that the number of cases to be dealt with would be in the neighbourhood of 4000 a year. The actual numbers have, however, proved to be far in excess of this estimate—namely, 1931 (10½ months), 6340; 1932, 9000; 1933, 8569; 1934 (estimated), 9250; the numbers not showing any decline in spite of the transfer of the Council's tramways to the Transport Board. It has, however, not been found necessary to call upon the services of consultants and specialists to any great extent; experience has proved the impracticability of dividing up the work in the manner originally intended. That being so the position of divisional medical officer is to be now upgraded to that of principal assistant medical officer (£950–£50–£1250). In connexion with the accelerated programme of slum clearance the temporary employment of two divisional medical officers in the public health department was authorised. At present one of these positions is being filled by the appointment of Dr. A. L. Banks, at present full-time assistant medical officer at the G.P.O.

Maternal Mortality

Replying on Dec. 11th to a deputation from the Maternal Mortality Committee (see THE LANCET, Nov. 10th, p. 1084) which included Lady Barrett, the Minister of Health said there was no evidence showing close relation between malnutrition and a high maternal mortality rate. Of the actual deaths examined, at least one-half occurred among well-to-do people and it was significant that the maternal death-rate for 1933 in such a depressed area as Durham was no higher than the death-rate in the relatively prosperous county of Middlesex. Nevertheless the conditions in the depressed areas were undoubtedly such as to give rise to anxiety and the position was receiving the close attention of the administration. In particular, local authorities had been urged to make, in appropriate cases, full use of their powers to supply milk and other foods to expectant and nursing mothers. The Government, he said, had given impetus to the development of the maternity services by local authorities and there would be no relaxation until the maternal mortality-rate had been reduced. Particular attention was being directed to:—

(1) *improving the antenatal service;*

(2) ensuring that the services of a trained midwife are available for all confinements;

(3) securing the provision of maternity beds for complicated cases and for patients with unsuitable home conditions, such beds to be associated where practicable with general hospitals, preferably in small units readily supervised, and for which prompt specialist services for serious cases may be made available;

(4) providing facilities for the adequate isolation and separate nursing of cases of puerperal sepsis; and

(5) obtaining the services of a consultant for doctors needing assistance in difficult or complicated cases.

Special inquiries, Sir Hilton added, were about to be made in those areas in which the maternal mortality-rate had been found to be abnormally high.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED DEC. 8TH, 1934

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 3717; diphtheria, 1920; enteric fever, 12; acute pneumonia (primary or influenzal), 1082; puerperal fever, 37; puerperal pyrexia, 115; cerebro-spinal fever, 15; acute poliomyelitis, 11; acute polio-encephalitis, 2; encephalitis lethargica, 5; dysentery, 22; ophthalmia neonatorum, 90. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Dec. 17th–18th was as follows: Small-pox, 0 under treatment, 0 under observation; scarlet fever, 1763; diphtheria, 2200; measles, 168; whooping-cough, 245; puerperal fever, 22 mothers (plus 16 babies); encephalitis lethargica, 267; poliomyelitis, 10; other diseases, 329. At St. Margaret's Hospital there were 20 babies (plus 8 mothers) with ophthalmia neonatorum.

Deaths.—In 121 great towns, including London, there was no death from small-pox, 1 (1) from enteric fever, 5 (0) from measles, 8 (0) from scarlet fever, 12 (5) from whooping-cough, 51 (8) from diphtheria, 11 (10) from diarrhoea and enteritis under two years, and 58 (17) from influenza. The figures in parentheses are those for London itself.

Deaths attributed to influenza are nearly stationary, the total for the last few weeks (working backwards) being [illegible] 61, 61, 32, 16, 2. This week they were distributed over [illegible] great towns, Manchester and Birmingham each reporting 3, Brighton, Gateshead, Liverpool, Salford, Bristol and Leicester each 2. There were 6 deaths from diphtheria at Liverpool, 4 at Birmingham, 3 at Oldham.

The number of stillbirths notified during the week was 215 (corresponding to a rate of 35 per 1000 total births), including 15 in London.

THE INFANTS' HOSPITAL.—On Dec. 11th the Princess Royal formally opened the new [illegible] block, the new nurses' home, and the [illegible] wards in the [illegible] building at the Infants Hospital, Vincent-square, [illegible] chief feature of the [illegible] and [illegible] while every ward [illegible] direct access to a balcony. [illegible] to be started. The cost of the [illegible] is about £[illegible]

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Registration and Regulation of Osteopaths Bill

IN the House of Lords on Dec. 11th, Viscount ELIBANK moved the second reading of the Registration and Regulation of Osteopaths Bill. He said that the purpose of the Bill was a very simple one—namely, to establish by Act of Parliament a Board armed with the necessary powers and authority to compile a register of osteopaths and to regulate the practice of this new system of therapeutics in this country. The main object was to impose upon the practitioners of this system a prescribed standard of professional training and technical competence which would debar unqualified and incompetent persons from setting themselves up as they now did as osteopaths claiming to be able to practise a system of manipulative therapeutics outside the ambit of the Medical Acts.

He appealed to Lord Moynihan, Lord Dawson, and others, who were rightly concerned to maintain the high standard of medical education attained in this country, who were rightly jealous of the high responsibilities imposed upon the medical profession by law, and who properly realised the necessity for preventing impostors and humbugs practising as doctors, to examine this Bill entirely from the ethical point of view of bringing the osteopath's profession in this country into conformity with the standards laid down for the medical profession. In this Bill there was nothing which would enable an osteopath to obtain admission to the Medical Register Osteopaths were not asking for admission into the medical profession; they were asking that they should be admitted to an osteopaths' register; that only qualified osteopaths should be registered; that the qualifications for registration should in their own particular way be as strict, as definite, and as onerous as those which admitted to the Medical Register; that no osteopath should be allowed to practise unless he was on the register of osteopaths, and that those who were admitted to the register as properly qualified should be allowed to claim the qualifications which they possessed, and to use such titles and descriptions as would identify them as osteopathic practitioners and nothing else.

The Bill was designed to do what was already done in other countries. In the United States, where osteopathy originated more than half a century ago, practically all the States of the Union had legislated on these lines. Since 1930 in all the 48 States and territories and in most of the provinces of Canada the osteopathic profession was regulated and controlled by boards similar to that which this Bill proposed to set up. Under the protection of these laws osteopathic colleges and schools, sanatoria, hospitals, and clinics had developed, and the science was being furthered and the technique perfected in a very impressive manner. New forms of specialised treatment were being evolved by the osteopaths, and their claim to be able successfully to diagnose and treat disease was not now seriously contested in the United States of America. That was also the case in Canada The proposed Board would include independent persons with scientific and technical qualifications, who would be selected by the Ministry of Health One of these independent persons would be appointed by the Privy Council, and would be chairman of the Board. The others selected by the Ministry of Health, and not being members of the ordinary medical profession, would be persons of recognised scientific status who would along with the representatives of organisations of osteopaths in this country lay down the subjects of study and the length of training which would qualify for registration. In the event of the Bill receiving a second reading he would ask the House to agree to the appointment of a Select Committee to examine this subject carefully and to advise their Lordships upon it.

Lord Moynihan's motion for rejection was negatived by 37 votes to 20, and the Bill was read a second time and referred to a Select Committee with leave to hear counsel. (The debate is referred to in a leading article on p. 1399.)

Indian Constitutional Reforms and Health Services

On Dec. 11th in the House of Commons the debate was resumed on the motion that the House accepts the recommendation of the Joint Committee on Indian Constitutional Reform as the basis for the revision of the Indian constitution, and considers it expedient that a Bill should be introduced on the general lines of the report.

The Duchess of ATHOLL called attention to the deterioration in the work of the local authorities in India, and emphasised the prejudicial affect on the welfare of the masses. She said that an ex-director of public health had stated in a recent review that many local authorities had brought to an end the extension of schemes of drainage and water-supply which had been steadily increasing before the constitutional reforms of 1921. In many cases, she said, they had got into such financial difficulties that they had not even been able to maintain the services of the kind which had been provided before. The noble lady asked the House to imagine what danger that meant to public health in a country such as India, with all its many epidemic diseases An inspector-general of civil hospitals told the Joint Committee of grave deterioration in the health services due not merely to the deficiencies of local authorities, but to the administration of the Minister himself and his constant interference in medical appointments. Most unsuitable men had also been appointed to other important medical posts, such as professorships, which must have had very serious effects on the welfare of the Indian people. A professor of physiology, the Joint Committee were told, was appointed who admitted to the Principal of the Medical College that he had never lectured, never demonstrated, and had done no physiology since his student days. An ex-inspector-general of hospitals spoke of the thousands of eyes that were blinded every year in India through operations for cataract performed by unqualified quacks, trained in institutions which were now receiving grants from public funds owing to the political pressure put on Ministers by Provincial Councils, which they had not been able to withstand. When they learned of facts such as those was it not inevitable that members should feel that the greatest caution was necessary in giving further constitutional powers?

Miss RATHBONE said that the record of Indian Government, both Central and Provincial, in the matter of women's interests had not been such that those who had those interests at heart could happily leave the initiative for further advances in their hands. She asked the Secretary of State for India what the position of the women's medical service would be under the new arrangements. Was it not time that this service should be given a more stable and recognised position, possibly by setting it up as a definite branch of the Indian Medical Service? Since the women's service was already subsidised by the Government, the change would not necessarily cost more money.

Dartmoor Convict's Suicide and Flogging

On the motion for the adjournment of the House of Commons on Dec. 11th, Mr. Bernays raised the question of the advisability of an inquiry into the punishment of flogging, which arose out of the case of a Dartmoor convict, Collins, who was condemned to 12 strokes with the "cat" and three years' penal servitude for an act of violence done while trying to escape from Dartmoor prison, and who committed suicide in prison on Nov. 29th.

Mr BERNAYS said that in a letter Collins left in his cell he said that he was being slowly murdered, and every night he was lashed with the cat His head was awful with all the worry and he thought it might go back on him any minute He tried to hide what was really the matter with him from the doctor and did not tell him all Mr Bernays added that he was sure the officials at Dartmoor were humane men and that nothing they did caused this terrible suffering He asked for an inquiry to discover whether flogging was really a deterrent, whether it was not too brutally administered, and whether, if it was really necessary in the last resort, its use ought not to be more seriously restricted than at present He called the Home Secretary's attention to a letter written to the *Daily Telegraph* on Dec 7th by a medical officer in a convict prison That gentleman gave his name, and wrote "*Apropos* of the question asked in the House yesterday regarding the suicide in Dartmoor of a convict sentenced to be flogged, may I, as one whose painful—and terribly painful—duty it has been to witness this ghastly form of punishment, protest against its continuance? Dreadful as it is, it has but one effect—and that is on the mind and body of the prisoner It does not act as a deterrent to others But the worst part of it is that it is a brutal application of the law, as well as the terrible knouts, that cut into the flesh of the receiver I shall not forget in a hurry the look on the face of two people when I last saw this punishment inflicted—i e , the flogger and the flogged Both were utterly demoralised, temporarily, and the savage brute came out in both of them Let us see an end of this ancient relic of brutal days"

Mr I FOOT said that all the evidence showed that the officials of the prison did all in their power in the case, and there certainly was no criticism of the medical officer

Mr O'CONNOR said it was easy to work up hysteria When he read the letter from the prison doctor which Mr Bernays had quoted, he thought that the doctor was making an unfair reflection on the men who had to perform the duty of flogging a prisoner He was sure, however, that the people who performed those sentences were scrupulously impersonal

Sir JOHN GILMOUR, Home Secretary, pointed out that on the one hand this form of punishment was ordered by the Court after very careful consideration, and on the other hand it could only take place after an inquiry by magistrates on the spot in the prison It was subsequently brought to the Home Secretary, and it was on every occasion most carefully and meticulously supervised by the medical officer If there was any doubt in the mind of the medical officer, his view was paramount in the matter and, even when the punishment was being carried out if there was the slightest sign that would lead the medical officer to suppose that any serious and permanent injury was likely to be inflicted on the individual, on his word that punishment ceased and was not continued The punishment was carried out with the greatest care and circumspection, and he trusted that the House would not ask for an inquiry of this kind

Health Conditions in Merchant Ships

On Dec 11th in the House of Commons Dr BURGIN, Parliamentary Secretary to the Board of Trade, moved the second reading of the British Shipping (Assistance) Bill which proposes to give a subsidy to tramp shipping

Dr ADDISON moved the rejection of the Bill on the ground that it subsidised private interests and did not include measures to ensure the payment of fair wages and good working conditions for those employed on board ships He said that the defective accommodation provided on some British merchant ships had its effect on the health of the crews Some very startling figures emerged from the examination of the records of the health of merchant seamen He had spent a little time looking into the mortality statistics relating to the mercantile marine issued by the Board of Trade in 1932 The number of seamen who died in that year was 3106, and of these only 612 were occupied seamen That seemed a relatively small proportion but when they looked a little further into the matter it turned out that no less than 625 men of those not returned as occupied died within 12 months of leaving the service and 295 died within three months of retirement In other words, they left to die They found that 20 per cent of the total deaths were of men who died within a year of leaving the service There was a staggering record of mortality from tuberculosis and other respiratory diseases No less than 611 out of 3000 died from those causes, and, of course, that was associated with bad accommodation in the ships When Parliament was granting a subsidy of £10,000,000 for the building of more ships they were entitled to secure that men should not be subjected to the sort of accommodation which produced those results

Sir HERBERT CAYZER said he fully agreed with Dr Addison that the personnel of the merchant service was of vital importance to this country It should be recognised generally that shipowners took a great pride and interest in their personnel There might be a few black sheep among them, as there were in every industry, but taking them as a whole British shipowners were keenly interested in the welfare of their crews and personnel

Mr ARTHUR GREENWOOD said he had a case with sworn affidavits of a fireman on a British ship passed by the Shipping Federation's medical officer as being fit for service as a fireman going out to West Africa, not liking it too much, because he was not really feeling too well Because that man took some objection he was disrated by the chief engineer and the skipper of the boat to the position of an ordinary seaman That man was found dead in the stokehold, very largely, he suspected from various sworn statements, not merely because of his own physical condition, but because of the condition of the boat itself Such conditions of employment were intolerable The Minister of Health had said that the Government could not pay for rotten cottages any more than it could pay for rotten meat He (Mr Greenwood) did not see why Parliament should subsidise the slums of the sea There were no worse conditions afloat than in tramp shipping

Mr DICKIE said that that was definitely untrue He was the only marine engineer in that House who held a first class Board of Trade certificate He had been through this particular mill, and he told Mr Greenwood that it was a foul thing to libel the conditions under which British seamen worked They were the best conditions in the whole civilised world and were infinitely better than they had been. A tremendous improvement had taken place during the last 20 years

Mr GREENWOOD said that personally he did not care whether the conditions in British ships were better than those in the ships of other countries, his point was that they had no more right in a subsidised industry to compel people to live in the slums of the sea than to compel them to live in slums on land

THE GOVERNMENT'S REPLY

Mr RUNCIMAN, President of the Board of Trade replying to the debate said that Mr Greenwood had drawn a picture of the British mercantile marine that no well informed person would recognise (Cheers) Dr Addison had referred to the health conditions in the mercantile marine He did not know from what report Dr Addison was quoting but he (Mr Runciman) had the latest volume of statistics relative to mortality in the mercantile marine He would quote the salient passages from that report —

"A crude death rate has been calculated and for ages 20 and over is found to be lower than that for the general population but the results cannot be regarded as reliable owing to the difficulty of estimating a population figure for the mercantile marine at a defiabout nine years after the preceding Census of Population, or (*b*) as furnishing an indication that the mercantile marine is a perfectly healthy occupation since the results are affected to a very considerable extent by the age distribution of merchant seamen which is so different from that of the general population "

Paragraph (7) said —

"The conclusion reached is that, apart from drowning and injury, service in the mercantile marine is no more inimical to life and health than are many occupations ashore frequently regarded as healthful."

A further paragraph said :—

"The question whether a period can be fixed so that, if all deaths of seamen occurring beyond this period after leaving the sea are excluded from the statistics of the occupation, the result represents the mortality due to sea service, has been examined, but it has been thought advisable to exclude any mortality record solely on the ground of the time elapsed since the last sea employment of the deceased, each case requiring to be decided on its merits "

Dr. ADDISON said the whole of his point was that a number of cases—630, he thought—of seamen who died within 12 months of leaving the service were excluded, and that they should be included. If those numbers were included it meant that large numbers of men retired from the service to die

Mr RUNCIMAN said it would have been fairer to the House if Dr. Addison had read paragraph 7 as well. The result of the arrangements which the Government were making under this Bill would lend to a general screwing up of the conditions under which the mercantile marine was administered

The motion for rejection was negatived by 384 votes to 121 and the Bill was then read a second time.

HOUSE OF COMMONS

WEDNESDAY, DEC 12TH

Pedestrians and Road Accidents

Sir FRANCIS FREMANTLE asked the Minister of Transport the number of deaths from road accidents during 1933 due to pedestrians stepping from the kerb into the roadway, and whether he would take action to inculcate the rule of the pavement to keep to the left so as to face on-coming traffic —Mr HORE-BELISHA replied The analysis of fatal road accidents in 1933 shows that of the 3517 pedestrians who were killed, 379 deaths were attributed to stepping from a kerb or refuge without looking This was assigned as the sole or main cause of the accident in 337 of these cases, and as a contributory cause in the remainder I have remitted the question whether or not pedestrians should be advised to keep to their left on the pavement, so as to face on-coming traffic, to the Committee on Road Safety for their report

Vice-Admiral CAMPBELL: Will the Minister consider putting handrails round the outer edge of the pavement in dangerous streets ?

Mr HORE-BELISHA Yes, Sir, that matter is being considered.

Mysterious Poisoning of Schoolgirls in Tanganyika

Mr PALING asked the Secretary of State for the Colonies whether he could give any information to the House as to the circumstances in which a number of native schoolgirls in Tanganyika met their deaths as a result of drinking a poisonous liquid by mistake, and what steps had been taken to avoid the possibility of any such occurrence in the future —Sir PHILIP CUNLIFFE-LISTER replied. I deeply regret this tragic occurrence I understand that on the morning of Oct 25th doses of what was thought to be shark oil (which had been used with success at hospitals in Tanganyika as a substitute for cod-liver oil) were issued, on the instructions of the headmistress (herself a doctor) to the pupils at Malangali girls' school It has now been established, however, that the liquid used was not shark oil, but some form of disinfectant resembling it in appearance but containing arsenic, with the result that all who had taken doses (including the headmistress herself) became ill, and 35 of the girls died It is not yet definitely known how the mistake occurred Further investigations are proceeding, and I will communicate to the hon Member any further information I receive As regards the second part of the question, orders were issued immediately after the occurrence to every Government station, and to all hospitals, tribal dressing stations, dispensaries, and mission stations to the effect that the use of shark's oil must be discontinued at once until after the matter had been investigated The question of what further action may be necessary must naturally depend on the result of the investigation

Irish Free State Hospitals Sweepstakes

Mr. McGOVERN asked the Home Secretary the amount of money for the Irish Free State hospitals sweepstakes which had been confiscated or returned after the opening of correspondence for each draw since they were initiated, and the number of prosecutions in connexion with each draw —Sir J GILMOUR replied. No money has been confiscated and it would not be in the public interest to give information as to the amount of the money returned As regards the second part of the question, I regret that the information is not available.

Thefts of Doctors' Bags

Mr THORNE asked the Home Secretary whether he was aware of the growing increase of thefts from unattended cars of doctors' bags containing drugs, and if he intended taking any action in the matter —Sir J GILMOUR replied I am aware that there have been a few such thefts, but I have no grounds for thinking that they are other than ordinary cases of petty larceny, and I do not think that there is any action I can usefully take in the matter The remedy is for medical practitioners and others who have drugs in their possession to take reasonable steps to avoid the risk of their being stolen, and I hope the publicity now given to the matter will lead to greater care being taken.

THURSDAY, DEC 13TH

Health Conditions in Sunderland and Seaham

Mr STOREY asked the Minister of Health whether he had given consideration to information from a responsible source on the state of the public health in Sunderland and Seaham which had been conveyed to him in a communication, and what steps he proposed to take in the matter — Sir HILTON YOUNG replied Yes, Sir The statements in question, which were contained in a letter signed by Dr. G. F Walker, of Sunderland, that has appeared in the press, require investigation My noble friend, the President of the Board of Education, and I have accordingly jointly instructed qualified officers of the Board of Education and Ministry of Health forthwith to visit this area for that purpose I have also communicated with the local health authorities concerned

Mr STOREY Will my right hon friend say whether the results of those inquiries will be made public ?

Sir HILTON YOUNG: I would rather consider the statement that I get from the officers in the locality before I decide.

Housing (Scotland) Bill

Mr NEIL MACLEAN asked the Prime Minister when the Housing Bill for Scotland would be introduced —Mr BALDWIN (Lord President of the Council) replied It is hoped that the Housing (Scotland) Bill will be circulated during the Christmas recess in ample time for its consideration before a date is fixed for the second reading

Working Days Lost by Sickness

Mr WEST asked the Minister of Health how many days' work were lost by insured persons owing to sickness in 1932 and in 1933 —Sir HILTON YOUNG replied It is estimated that the sum expended on sickness and disablement benefits by approved societies in England and Wales in the years 1932 and 1933 represented 164,000,000 and 174,000,000 working days respectively.

OBITUARY

CHARLES JOHN JACOMB-HOOD, M R C S Eng, L S A

Dr Jacomb-Hood, whose sudden death occurred on Nov 28th, was one of the best known medical practitioners in Brighton He received his medical education at King's College, London, and after obtaining the English double diplomas he served as house surgeon and assistant surgical registrar at King's College Hospital He was later house physician at Queen Charlotte's Hospital, and then started in practice some 40 years ago in Brighton In Hove and Brighton he was a well-known figure He was honorary surgeon to the Hospital for Women and to the Brighton and Hove Dispensary, and senior medical officer to the Mutual Provident Society, he was Colonel R A M C (T), and during the war commanded the local territorial unit with medical charge of the camp at Shoreham He was chairman of the Brighton Insurance Committee until his resignation this year

Dr Jacomb Hood will be missed by a large number of patients and friends who held him in singularly close regard He was a bachelor

WILLIAM MORRISON MILNE, M B, C M, F R C S Edin

Dr William Morrison Milne, who died on Nov 24th in Edinburgh, was for 10 years a member of the teaching profession before he turned his attention to medicine Born in 1861 he graduated as M.A in the University of Aberdeen and was in succession headmaster at Latheron, Caithness, and Alness, Ross shire, before proceeding to Edinburgh for his medical training He graduated as M B, C M Edin in 1896 and held many clinical posts at the Royal Infirmary, Edinburgh, while he was also house surgeon at the Leith Hospital He took the diploma of F R C S Edin in 1901 and manifested a distinct leaning towards the surgical side of his duties, during his 40 years as a general practitioner in the south of Edinburgh Dr Milne is survived by his widow and two sons

MEDICAL NEWS

loyal College of Surgeons of England

A meeting of the Council was held on Dec 13th, with ir Holburt Waring, the president, in the chair Mr R St Leger Brockman, surgeon to the Royal Infirmary, heffield, was elected a member of the court of examiners n the vacancy caused by the retirement of Prof Ernest W Hey Groves Dr A J E Cave, senior demonstrator n anatomy at University College, London, was appointed ssistant conservator of the museum

Diplomas of fellowship were granted to the following andidates —

Arthur David William Jones M B Lond George Edward Graves Peirce, M B Lond Arthur Norman Jones M B Liverp, Bijeta Chaudhuri, M B Bombay John Arthur Pocock M B Camb John Charles Nicholson B M Oxon Richard Harrington Franklin, M B Lond, Muriel Hilary Eileen Long M B Lond, John Stanley Batchelor L R C P Lond Johann Wilhelm Fure Hjalmarson Lindahl L R C P Lond John Scholefield, M B Leeds Pravat Chandra Sanyal M B Calcutta Allen John Bridson Goldsmith, M B Lond Henry Heber Langston, M B Lond, Guillaume Tom Du Toit L R C P Lond Frederick John [illegible] Gowar M B Lond Alan Francis Goode M B Birm Frank Radcliffe M B Camb Stephen Creighton Suggit M B Lond, William Gordon Gill, M B Camb Hugh Morgan Williams M B Lond Sharad Chandra Misra M B Lucknow John Alison Strachan Mair M B Cape Gopal Krishnaya Mulki, M B Bombay George Qvist M B Lond James Hardman M B Birm Shri Rameshwer M B Lucknow James Kennedy Elliott, M B Edin Alexander William Badenoch M D Aberd, Joseph John Brownlie M B N Z William Henry Graham M B Glasg William Robert Henderson M B Edin Rustom Jamshedji Katrak M B Bombay Hilda Margaret Linford M D Manch Walter Stafford McGrath M B Sydney John Archibald McLauchlan M B Edin George Henderson Macnab, M B Edin Wilfred Henry Bertram Magauran M D N U I Juan Antonio Martinez M B Liverp Ramaswamy Nagendran M B Madras Herbert Kenneth Pacey M B N Z Eustace Alwynne Rowlands M B Melb, Harley Irwin Turnbull M B Sydney

A diploma of membership was granted to Mr Garthowen Williams (Cambridge and St George s)

At the primary examination for the fellowship held recently, 198 candidates presented themselves of whom 67 were approved and 131 were rejected The following are the names and medical schools of the successful candidates —

B S S Acharya St Bart s and Middlesex J H Ascott St Thomas s J C Baker M B Sydney Middlesex [illegible] Birdsall, [illegible] M B Camb Manch and Middlesex [illegible] St Thomas s [illegible] Camb St Bart s A H Bird St Thomas s [illegible] Branson [illegible] Camb and St Bart s Katharine M H [illegible] King s Coll [illegible] Roy Free, Doris H Brown M B Leeds King s Coll [illegible] Univ Coll [illegible] Camb and St Thomas s A Cohen Univ Coll [illegible] M B Liverp [illegible] Coate M B Belf Univ Coll [illegible] Middlesex [illegible] K R Cowen M B Melb, Middlesex [illegible] M D Edin, [illegible] M B Bombay Middlesex, Gladys H Dodd St Andrews and Univ Coll, W A D Drummond M R C S New Zealand and [illegible] E M Evans Middlesex G Flavell [illegible] St Bart s, [illegible] L Ford M B Durh Middlesex [illegible] M B N Z Middlesex S R Gerstman, M B Melb [illegible] Univ Coll L W Gleadell M B Melb Guy s, C H Gray M B Manch Middlesex R B Grey M B N Z Middlesex and Guy s E J Grieve M B Melb, Middlesex and Univ Coll, Gladys Hill M B Lond Roy Free, R A Howard M D Melb Univ Coll H C Hugh M B Lond St Bart s and Middlesex, J H Hughes M D Liverp N F James London R T Johnson Camb and St Bart s W G Johnston M D Toronto Univ Coll, A S Kerr M B Liverp, P Kidd, Camb and London J S McConnachie Aberd and St Mary s A C McEachern M B Adelaide St Mary s and Middlesex, D H Mackay, M B Manch A D McLachlin, Western Univ and Oxford R K Magee, M D Toronto Middlesex, I Mehrez M B Cairo London P S Meyrick Univ Coll S A Mian, M R C S, Punjab and Middlesex P M Moffatt M D Lond, Guy s, G A Myers M B N Z Middlesex and Univ Coll, W A B Nicholson M B Manch L O Oliver M R C S, Guy s and King s Coll J O Shea M D Dubl, Middlesex and London R V Payne, M B Camb and Guy s L J T Pellew, M B Adelaide Middlesex, J S M Pringle M B Camb and Dublin, A Rakoff M B Dub St Mary s F F Rundle, M B Sydney C P Samuel St Mary s J L Scholes M B Melb H S Shucksmith M B Leeds King's Coll E R Smith St Thomas s S L Spencer M B Sydney Middlesex B W Stevens, M D Toronto Middlesex G S Thompson M B Sydney Middlesex N Vere Hodge Camb and Middlesex H K Vernon, M B Durh Middlesex, Lilian H Walter Roy Free, W H Waterfall Camb and London, L L Whytehead Oxford and Middlesex G H Wooler Camb and London R G Worcester M B Melb, Univ Coll and Middlesex

The secretary reported that at the primary fellowship examination, held in Melbourne recently 45 candidates were examined of whom 22 were approved

University of London

At recent examinations the following candidates were successful —

THIRD EXAMINATION FOR M B B S

Honours —Eleazar Galinsky (*b c*) and A G Hounslow (*a c e*) Univ Coll Hosp Nora L Kemill (*e*) Roy Free Hosp M J F McArdle (*a*) Guy s Hosp and S J J Taylor (*e*) St Thomas s Hosp

(*a*) *Distinguished in Medicine* (*b*) *Distinguished in Path logy* (*c*) *Distinguished in Forensic Medicine and Hygiene* (*e*) *Distinguished in Obstetrics and Gynaecology*

Pass —S H Abul St Thomas s Hosp I G Anderson King s Coll Hosp Alberta I Andrews and Lole Arner Roy Free Hosp Margaret D Baker and N H Barrett Univ Coll Hosp D M Bloom H St Bart s Hosp H B Boucher St Thomas s Hosp C J H Briggs Univ Coll Hosp, J A Brocklebank Guy s Hosp, F N Brockway St Thomas s Hosp W M Capper St Bart s Hosp H S Carter St Thomas s Hosp W H Cartwright St Bart s Hosp, Jean M Chase Roy Free Hosp R G Clayton King s Coll Hosp, Gladys L Clyne Roy Free Hosp L W Davies St Thomas s Hosp G W Dessmond and K C Eden Univ Coll Hosp J H Falconer and W T J Fowler Guy s Hosp Joan E French [illegible] Adams Roy Free Hosp D J Gilbert King's Coll Hosp F H Gilbert [illegible] Grant and Louie Greenhill London Hosp John Greethead Guy s Hosp T J H Groves St Mary s Hosp, J C Harvey St George s Hosp, J S M Hayes and Anthony Hollingsworth St Thomas s Hosp [illegible] King s Coll Hosp J J A Jones [illegible] Hosp [illegible] St Mary s Hosp Alice M Kaye King s Coll Hosp J H Kelsey [illegible] Hosp J H Kinnaird Guy s Hosp J H Kingsley [illegible] Hosp [illegible] Margaret M C Lenden Roy Free Hosp, Peter W [illegible]

Guy's Hosp , G G Macdonald, Univ. Coll Hosp , A L. McFarlane, King's Coll Hosp ; W M Macleod, St. Thomas's Hosp , C F. Mayo-Smith, St George's Hosp , C B. Miller, King's Coll Hosp ; Barbara G Morton, Roy Free Hosp ; J A W Musson, Middlesex Hosp , R H Purnell, St Bart 's Hosp , A M Rackow, King's Coll Hosp , D C Reavell, A T Roden, and B F B Russell, St Bart.'s Hosp , K G Seager, St Mary's Hosp Catherine L Simmons, Roy. Free Hosp ; M C. L Smith, St Bart 's Hosp , La-lad Sobiya, Guy's Hosp ; Kenneth Soddy, Univ Coll Hosp , E J Somerset, King's Coll Hosp , W. H C Spooner, St Mary's Hosp , K F. Stephens, St Bart 's Hosp ; G. L Timms, St Thomas's Hosp , T G. Tregaskis, St Bart 's Hosp , R J Vakil and M E Wigfield, St Thomas's Hosp , and E Ll Williams and Betty M Zeal, Univ. Coll Hosp.

The following candidates have passed in one of the two groups of subjects.

Group I—Mary Barber, Roy Free Hosp ; R M. Clarke, Middlesex Hosp ; G B Davis, King's Coll Hosp. , H. A. Eason, London Hosp ; J F A Forster, Guy's Hosp , P G. F Harvey, St Bart 's Hosp. , I. H Jenkins, St Thomas's Hosp , A E Jones, Guy 's Hosp , A C Kanaar, St Bart 's Hosp , Abraham Lesnick, Univ Coll Hosp , J B H McArthur, Guy's Hosp , Tudor Miles St Thomas's Hosp ; Arnold Moore, Univ Coll Hosp. , Elizabeth C Morris, Roy Free Hosp. ; H S. Pasmore and A W. Probert, Univ Coll Hosp , J G Sheldon, Univ of Liverp , and J P Thyne, King's Coll Hosp

Group II—Marjorie Bolton, Roy Free Hosp , P. R Boucher, St Mary's Hosp , R B W A Cole, Univ. of Durham , V H J Davies, Charing Cross Hosp , H J Fenn, King's Coll Hosp , Barbara J. Fisk, Roy Free Hosp , E A. Hardy, Westminster Hosp , O S Heyns, Univ Coll Hosp. , D M Jones, St Bart 's Hosp. , J G Jones, King's Coll. Hosp , J A. Lewis, St George's Hosp , M J Lindsey, Guy 's Hosp , J R. M Martin, St Bart 's Hosp , R B. Morton, St Thomas's Hosp , H. N. Perkins and J H Playne, St Mary's Hosp , Irene H Rogers, King's Coll. Hosp , Randall Sollenberger, St. Mary's Hosp , W J Stokes and F G St Cl Strange, London Hosp ; and W H Summerskill, Guy's Hosp.

University of Bristol

Dr. H. J Drew Smythe, lecturer in obstetrics in the university, has been appointed to succeed Dr. R S. S Statham in the chair of obstetrics

Dr Drew Smythe was born at Northampton in 1891 and educated at Taunton School He studied medicine at the University of Bristol, where he obtained the gold medal of the medical school in 1913, and at the London Hospital Qualifying in 1913 he served throughout the war in the Royal Army Medical Corps—in which he now holds the Territorial rank of lieut.-colonel—and was awarded the Military Cross He graduated as M S Lond. in 1920, became F R C S Eng in the following year, and is a fellow of the British College of Obstetricians and Gynæcologists He has held honorary appointments both at the Bristol Maternity Hospital and at the Bristol General Hospital, where he is now obstetric physician and gynæcologist His contributions to medical journals include papers on the treatment of cervical erosion, the management of the normal puerperium, and *coli* infections of the genital tract

The council of the university has decided to establish a full-time chair of medicine and, subject to the concurrence of the Bristol General Hospital, the first holder of the chair will be Dr C. Bruce Perry

Dr Bruce Perry graduated at Bristol in 1926, proceeding to the M D degree in 1928, when he also became a member of the Royal College of Physicians of London In 1929 he was awarded the Buckston Browne prize of the Harveian Society of London for an essay on chronic streptococcal illnesses As Colston research fellow at the university centre of cardiac research he was closely associated with the work of the late Dr Carey Coombs, some of which he has continued, and his original observations have been mainly concerned with juvenile rheumatism and heart disease He is at present assistant physician to the Bristol General Hospital, out-patient physician to the Bristol Royal Hospital for Sick Women and Children, and physician to the Winford Orthopædic Hospital

The following appointments have also been made: Dr. Charles Corfield, lecturer in charge of the department of anæsthetics , Dr C E. K Herapath, clinical dean at the Bristol Royal Infirmary , Dr L A Moore, clinical lecturer in anæsthetics , Mr R. Gordon Paul, clinical lecturer in surgery , Dr H J Orr-Ewing and Dr. G E F. Sutton, clinical lecturers in medicine.

In the final examination for the degrees of M B , Ch.B , R A Mathews has passed with second-class honours

University of Birmingham

On Dec 14th the following degrees were conferred —

M B , Ch B—H T D Bocking, J. D Cruikshank, Brenda Fife, and R N Jones

University of Sheffield

At a meeting of the university council, held on Dec 14th, Mr J. C Anderson was appointed lecturer in applied anatomy and demonstrator in anatomy , Mr A W. Fawcett, lecturer in surgical pathology , and Dr E. F. Skinner, lecturer in psychology.

University of Manchester

Mr. Philip Godlee has presented to Lister House (the university medical hostel) a silver flagon, formerly the property of the late Lord Lister. It was presented to Lord Lister by his colleagues on the occasion of his appointment as regius professor of surgery at Glasgow in 1860

University of Edinburgh

On Dec. 14th the following degrees and diplomas were conferred :—

M D—K V. R Choudari (in absentiâ), R T Cooke, J L Cowan, **J S. Faulds, *J R Innes, R. Y Keers, R M Macfarlane, *A C M'Master, *A. S Paterson, *Susanne J Paterson, H B Porteous, D C Sutton, B N V. Wase-Bailey, and *Bryan Williams

** Highly commended for thesis * Commended for thesis

Ph D—E B Hendry and Dorothea M Mowat

M B , B S—G L Birnie, J. H Bowie. B H. Charles A O Coker, S H Gibbs, G R Gunn, W. S Harvey, R M. Hayes, K. I W. Kleinberg, G C. E Laing, Theodore Leontsinis, J M'N Lockie, H H Lockwood, Ian Macpherson, H R Mores, G B Petrie, Johanna M Pienaar, R E Prichard, M A Rifat, L V. Roberts, G G Robertson. Una R Roy, H. L R Sargant, Felix Schwartz, G A Scott, I M Scott, G A M Smith, Hugh Watson, and H K Wong.

D.R—A R Cowan

Dr. Edwin Matthew has been appointed to the university chair of clinical medicine in succession to Dr. Edwin Bramwell, who has resigned

Dr Matthew graduated as M.A in 1889 at Aberdeen, but studied medicine at Edinburgh, where he took his M B with first-class honours in 1897 and his M D. with the gold medal in 1908. In 1906 he was elected fellow of the Royal College of Physicians of Edinburgh, and he now holds the appointments of physician to the Royal Infirmary and consulting physician to the Leith Hospital He was formerly lecturer in the system of medicine at the school of medicine of the Royal Colleges at Edinburgh, and his published papers include many on practical problems of therapeutics

Medico-Legal Society

Sir Bernard Spilsbury, as president, took the chair at the annual dinner of this society held on Dec. 14th Speaking to the toast of medicine and law, Mr. Justice Humphreys said that although he knew very little about medicine he had observed that all its forms seemed to have one constituent in common—namely, the drug known as "menth. pip" The law on any subject was what a judge or judges (but not all the judges) had last pronounced it to be Judges, like doctors, might differ and their clients, like patients, might benefit Statute law was formerly made by Parliament, but Parliament had abrogated its rights, and to-day the laws were made by people called ministers—which meant a clerk in a back office in Whitehall In the profession of medicine the community owed a debt especially to research workers and to the general practitioner, who was overworked and underpaid In his experience practitioners had a knowledge of medicine and surgery fully sufficient to give a jury a clear account of the case and to treat the patient in the way which gave him the greatest possible chance of recovery. The profession of law, he thought, was remarkable for the absence of jealousy among its members Lord Horder, replying for Medicine, said it would be a delightful thing, for a change, to see a patient who—like Sir Travers Humphreys—knew very little about medicine The profession as a whole did not seem to be held in the esteem always accorded to doctors as individuals His own objection to the alternative of osteopathy, however, was that he did not understand how a single therapeutic measure, however useful, could be erected into a system of medicine The first, second, and third most important thing in practice was diagnosis, and he did not see how there could be any substitute for it and for the pathology which underlay it If the man who had only one method of treatment was to be raised to the same position as the medical practitioner, what would happen to the public ? But the public got the doctors it deserved, and if it wanted to try out one particular method of therapeutics for all diseases—if it liked to call in an osteopath for typhoid fever or ruptured gastric ulcer—well, he would be interested to see the result Certainly he did not think that doctors should protest too much against an experiment of this kind, for to do so would be to make the osteopath seem like a martyr, and martyrdom was the best form of propaganda In conclusion, Lord Horder referred to the need for establishing one or more medico-legal institutes which would strengthen the important link between medicine and law Judge Earengey also in reply, commented on the immense volume of literature which now represented the law that every man was supposed to know The health of the society was proposed by Mr Justice Swift, who suggested that members should express an opinion on flogging for crimes of violence He concluded with a warm tribute to the president as expert witness and public servant Sir Bernard Spilsbury in reply, referred to the loss suffered by the society in the death of Lord Riddell, and reviewed the work of the year The membership had now increased to 330 He also spoke of the proposed medico legal institute, for which the prospects now seemed more hopeful Mr L R Bolton proposed the health of the guests and Dr Robert Hutchison, replying, admitted that, though not a member of the society, he had on his shelf an *omnibus* volume bearing the words "Detection, Mystery and Horror", he also confessed to the peculiar taste of liking lawyers Sir Lancelot Sanderson replied as a representative of law

Dental Science Prize

The Colyer prize of the Royal Society of Medicine will be awarded in July, 1935 It was founded in June 1926, to commemorate the 25 years' service of Sir Frank Colyer as hon curator of the odontological museum, and is given for the best original work in dental science completed during the previous five years by a dental surgeon who has not been qualified for longer than that period Applications should be sent to the secretary of the society, 1, Wimpole street, London, W 1, before March 31st

Epsom College

The fifty seventh annual meeting of the Old Epsomian Club, when 137 members and guests dined together at the Great Central Hotel was good evidence of the growing prosperity of Epsom College The club now numbers over 1100 members Mr R M Handfield Jones (O E) who presided has been secretary of the club for ten years, and is now retiring from that position and from the council of the college after having devoted a large part of his leisure since leaving school in 1910 to furthering its interest Mr J S Cotman (O E), F I C A, who proposed his health, contrasted the present school—more than 400 boys, a staff of 160, and a weekly expenditure of over £1000—with pre war conditions We were hardy people, he said, the early Epsomians, and he gave some telling examples of progress Mr Handfield-Jones proposing the toast Floreat Epsomia said that the destiny of Epsom College had been guided by 'a very great man' in the person of Sir Raymond Crawfurd and had been fortunate in the Bursar's "brilliant administrative talent" happily diverted from a business career Speaking freely as an ex member of the college council, he said that the benevolent side of the foundation *must* be divorced from the school itself It should be the policy of the council to devise some scheme during the next 12 to 15 years by which a sufficient fund could be built up to supply foundation scholarships and the headmaster Rev A C Powell, in replying fully endorsed his words After welcoming Lord Leverhulme as the new president of Epsom College Mr Powell mentioned some athletic records and a remarkable entry of 21 candidates for the first medical examination of whom all but two were successful He alluded for the first time to the Lambeth school mission each week a party of Epsom boys attends this mission club Dr A B Howitt (O E) M P, proposed The Guests (of whom "of course" the most important were the head prefect and the captain of Rugby football) Lord Leverhulme in replying, said that his election as president followed shortly on his first attendance at a local race meeting Prof T B Johnson, dean of Guy's who also replied in a humorous address, paid tribute to the characteristics of Old Epsomians entering Guy's Hospital The O E, he said was not afraid of hard work did not shirk responsibility, and could be relied on to carry out what he had to do An admirable innovation at the dinner was the showing of a film of school life on last Founder's Day Many past and present members of the college council were present at the dinner including Dr Henry Robinson, Sir John Broadbent Dr Harold Spitta Mr T Hollis Walker (O E), K C, Mr A G C Parkinson (O E), and Lord Horder

At the recent meeting of the General Medical Council the names of George Harry Bishop, Horatio Walter James Steen, and Henry Blanchard Walters were restored to the Medical Register

Royal Lancaster Infirmary

The new wards and X ray departments at this infirmary have been opened by Lady Sefton, and it is announced that they are starting free from debt

Willesden Maternity Hospital

Sir Comyns Berkeley will open the extension of this hospital at Honeypot lane Kingsbury, London, N W, on Saturday, Dec 29th, at 3 P M

M O H 's of Irish Counties

Last week, under threat of a mandamus from the minister for Local Government and Public Health, the Longford county council agreed to refer the appointment to the commission Leitrim, however, remains obdurate

Appointments

FREWER E G M B Camb, has been appointed Assistant Resident Medical Officer to the City of London Maternity Hospital

GILBERT B M B Lond, F R C S Eng, House Surgeon to the Chelsea Hospital for Women.

GRIERSON A M M, M D Edin., D P H Assistant Medical Officer of Health (Housing Act, 1930) to the City of Manchester

MARSHALL, F N, M D Manch Assistant Medical Officer of Health to the City of Manchester

MARSHALL GEOFFREY, O B E. M D, F R C P Lond, Assistant Physician to the Hospital for Consumption and Diseases of the Chest Brompton

GOLD WILLIAM M R C S Eng Senior Resident Medical Officer to the City of London Maternity Hospital

Westminster Hospital—The following appointments are announced —

LEE E S, M B Lond, F R C S Eng Surgical Registrar,
HEATH NEWTON M A Oxon, M R C S Eng, Surgical Registrar, and
MACNAB, G H, M B Edin, F R C S Eng Surgical Registrar

Certifying Surgeon under the Factory and Workshop Acts Dr W G F O Morris (Lynton, Devon)

Births, Marriages, and Deaths

BIRTHS

FAIRLEY —On Dec. 6th, at Four Oaks Warwickshire, the wife of Dr James Fairley, of a daughter

FORREST —On Dec 11th, at Ferndale Torquay, the wife of Devereux Forrest M D M R C P of a daughter

GOSSET —On Dec 8th at Cliff-avenue Margate the wife of Dr A C V Gosset of a daughter

HALL SMITH —On Dec 13th at County Gates Bournemouth W the wife of G W Hall Smith, M B Camb of a daughter

MOLESWORTH —On Dec 8th at Folkestone, the wife of H W L Molesworth F R C S Eng of a son

SHACKEL.—On Dec 13th at Mayfield Sussex the wife of Edward M Shackel M B Camb of a daughter

MARRIAGES

FURLONG—LEFAUX —On Dec 11th at St. Andrew's Mottingham Ronald Furlong M B Lond, F R C S Eng of Eltham to Elsa eldest daughter of Mr and Mrs Ernest Lefaux of West Park, Eltham

HARVEY WILLIAMS—MARSHALL.—On Dec 6th at St. Andrew's Cheam, Robert Harvey Williams F R C S Edin to Evelyn Margaret (née Orr Ewing) widow of Lieutenant Herbert Marshall, R A F

HUME —MOORE.—On Dec 10th at Cambridge Major General Henry C R Hume, C B D S O, late Royal Army Medical Corps to Hilda Margaret younger daughter of the late Mr F Moore and of Mrs Moore of Cambridge

PRICE —LAWTON —On Dec [illegible]th at Stanton Prior Somerset, Kenneth Hampden Price M B Lond F R C S Eng, of Bristol to Joanna Mary Lawton M R C S Eng

DEATHS

FRANKLIN —On Dec 1st at Bournemouth Denham Francis Franklin F R C S Edin Lt-Col, R A M C retd aged [illegible] years

GAIGER —On Dec 14th at Birkenhead Sydney Herbert Gaiger F R C V S Professor of Veterinary Pathology University of Liverpool

JOHNSTON —On Dec 12th in London [illegible] Stewart Powell Johnston Surgeon Commander, R N M R C S Eng [illegible] at Hastings

[illegible] On Saturday Dec [illegible]th at [illegible] [illegible] Kent, Harry [illegible], M B Camb

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

NOTES, COMMENTS, AND ABSTRACTS

ADAM ROUS

SURGEON TO EDWARD THE THIRD

By R. R. James

Beyond the short abstract of his will, proved in the Court of Husting of the City of London, little would appear to be known about Adam Rous. The Court of Husting is of Scandinavian origin; its functions as regards wills were principally concerned with those of real property. Thus the wills of citizens who owned property in the city and left children to succeed were proved in this court, but there was no reason why they should not have been proved before the ecclesiastical authorities as well and several cases occur in which both customs were followed. Rous's will was also proved in the Commissary Court of London and the record, in Latin, is preserved at the Principal Probate Registry at Somerset House. The practice of proving wills before the civil as well as before the ecclesiastical authorities was not confined to London; many Bristol wills were proved before the mayor as well as before the ecclesiastical authorities until well into the sixteenth century.

The Patent and Close Rolls of the period contain a few references to Rous and there is a good deal about him in the records of the Husting Court. In passing I may note that an Adam le Rouse, of Donestaple (Dunstable), is referred to on the rolls of the year 1314. It is tempting to think of him as an ancestor of the surgeon, but the name was fairly common at the time and usually indicated that the possessor was red-headed.

My first fact occurs on the Close Roll of 33 Edward III, 1359, March 24th. "Master Adam Rous the King's surgeon is sent to the Abbot and Convent of Crovland to receive such maintenance in that house for life as Henry atte Naysse, deceased, had therein at the King's request, by privy seal"

This is a typical example of what is known as a corrody: an allowance or money due by a monastery to the founder for the maintenance of one of his servants As Adam did not die till 1379 it will be seen that he enjoyed his corrody for 20 years I think it is pretty certain that he did not avail himself of the order to reside in the abbey but took the money equivalent instead. Dugdale (*Monasticon*, II, 102) says that Croyland was worth at this time to the King £85 6s. ½d, of which the allowance to the monks amounted to £8 17s ½d. The Patent Roll 35 Edward III, 1361, Nov. 4th, gives a grant for life to the King's surgeon Master Adam le Rous of a messuage and four shops in the parish of St. Mildred in la Poletrie, a messuage in the parish of St Edmund the King in Lumbardstrete and three shops in Bercherin's-lane in the city of London; which are extraded at 8 marks yearly beyond reprises and charges incumbent on them, and escheated to the King because Alice, daughter of Peter le Rous of Grenestede who held them of him in chief died without heir, as has been found by inquisition taken by John Pecche mayor of the city and escheator there

In 1372 there is a further reference to this grant, this time in fee. The Patent Roll of 48 Edward III, 1374, Feb 26th, records a grant to Master Adam the King's surgeon in recompense of two grants of £10 yearly at the Exchequer by letters patent surrendered, dated May 16th in the 31st year and Oct 1st in the 32nd year respectively, of the £20 yearly which the exors and assigns of Thomas de Lodelowe deceased, one of the barons of the Exchequer, are held to pay yearly for the keeping of two parts of the manors of Westtillebury and Plombergh, co. Essex, late of Thomas Vaghan, chivalier, who held in chief during the nonage of his heir: grant also if the heir attain full age during the life-time of Adam he shall have £20 yearly at the Exchequer again, as granted in the said letters patent.

The Close Roll of 50 Edward III, 1376, June 18 contains the following interesting record

To the Mayor and Sheriffs of London: Order up the *petition* of Thomas,† prior of St Bartholom Smythefeld London, if in a plea pending before them the Husting of London, without the King's writ, betw Adam Rouse, "leche," and the *said prior* concern the unlawful *taking* and detenue of chattels of the s Adam, *proceedings having* been had and allegation m as hereinafter mentioned, to proceed therein with w speed they conveniently may, doing speedy justice the parties according to the law and custom of the s city such allegation notwithstanding, provided t proceed not to *rendering judgement* without advising King, as the said petition shews that the prior avowed that the taking of the naam * (*sic*) aforesaid certain tenements in the parish of St. Mildred in Poultry which were of Robert Moton, by reason of a cert rent therefrom issuing which *pertains to his said chu* and to him is in arrear, is lawful and reasonable, shew *also that* the plaintiff in his pleading has alleged t lately the King by letters patent granted those teneme to him for life, and after by other letters patent confirm his estate therein to the said Adam and his heirs for e and that so he ought not to proceed in that plea with *advising the King, and* shewing that by reason of t allegation the Mayor and Sheriffs have deferred and do defer to proceed therein

Unfortunately the records of the Court of Hust tell us nothing about this distraint of the prior St Bartholomew's, but as the hospital benefi under Rous's will it would seem that no ill-feel resulted But though the Husting rolls are sil *upon this point they provide* us with 14 grants property to or by Rous or his wife I have omit many facts of interest in the topography of London, such as in most instances the boundaries the estates, as well as the names of most of witnesses.

HUSTING ROLL 91

No. 19. Grant by Thomas, son & heir of Henry Vym sometime citizen of London & Katherine his mot widow of the said Henry, quitclaiming to Master Ad Rous, surgeon of our Lord the King & citizen of Lon & his heirs all their claims in a shop with solar built o it in the parish of All Saints in the Roperie Sea before *Stephen Cavendisshe, Maior, James* Andren John Albon, Sheriffs, Bartholomew Frestlyng, Alder of the Ward Five witnesses named, among them W de Stodye London Monday next St Matthew. Edwd. III.

No 25 Grant by Cristina relict of John de Harpesf citizen & shoemaker of London & Thos de Hynde supervisor of *John's will,* by *virtue & authority* of said will & of a plea held in the Husting Monday bef St. Margaret, 36 Edwd III, confirming to Adam, King's surgeon 2 shops with solars & with a water cou through gutters in the parish of All Saints the Great the Ropery lying between the shop of the said John the west and a tenement called le Hood-on-the-Hop the *east, for 44 shilling sterling paid annually* & quit r as John in his life time received it for a certain small p annexed to a certain shop situated in the same parish u the corner of Dounegate (Dowgate) Signed as before last, with 6 witnesses London 10, Feb 37 Edwd I

No 50. Grant by William de Stodeleye, rector of Benedict next Paules Wharfe confirming *to Adam* a Cristina *de Herpesfeld and her heirs a tenement* w shops, cellars, solar etc in the corner of Dowgate, in parish of All Hallows at Hay Sealed before the May etc as before London 9, March, 37. Edwd III

ROLL 92

No 168 Refers to the messuage and shops in t Poultry and Lombard St which belonged *to* Al daughter of Peter le Rous (*vide supra*) "for good service" Dated 4, Nov 35 Edwd III

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† Thomas de Watford, died 1381 (*Monasticon*, vol VI.

* From *namare*, to distrain.

ROLL 94

No 76 *Grant by Adam quitclaiming to Cristine* (*vide supra*) all his title & claim to the tenement jointly held by demise from Wm de Stodleye at the corner of Dowgate Sealed before Adam de Burge, Maior, Simon de Mordone & John de Mitforde, Sheriffs, Frestlyng Alderman etc London 20, Aug 39 Edwd III

ROLL 95

No 67 A long document by Cristine reciting the above grant (John's exors had sold the tenements in Dowgate to Wm de Stodeley) now Cristine confirms to Adam Sealed before John Lovekyn, Maior John Warde & Thos atte Lee, Sheriffs, Frestlyng, Alderman London Saturday before St John *ante portam Latinam* 41 Edwd III

ROLL 106

No 74 Adam, citing letters patent of Edward III, granting him a messuage and 4 shops in St Mildred in the Poultry, confirms to Wm atte Vyne John Mirfeld & Robt Brien viz a messuage and 3 shops & the reversion of the fourth shop which Wm Algar sherman, held and 2 marks of rent which reverted on the death of Algar Witnessed by Nich Brembre, Maior Nich Twyford & And Pykeman, Sheriffs etc London 11 Dec 1 Rich II

ROLL 107

No 11 Deals *in a similar way with the* property in Lombard St. confirming to the last named Witnesses, as last *London* 9, July 2 *Rich II*

No 44 Grant by Adam & Juliana his wife to Robt de la Launde, goldsmith and citizen of London John Yne and Laurence Wympole, clerk of the tenement which was Hawyse, relict of Wm Swalbo and after of Wm Waryn, citizen and candeler, situated in Wodestrete in St Alphege within Crepulgate And if it happen that the said brewhouse with its belongings be treated fraudulently then a certain chantry founded by *the donors* at the altar of St John Baptist *in the church of* Lesnes may altogether cease Witnesses Brembre, Maior Thos Cornwaleys and John Boseham, Sheriffs, Robt Warburton *Alderman*, etc *London* 15, Oct 2 *Rich II*

No 45 Grant by Robt Launde *and* the other feoffees named above *to* Adam and Juliana of the above said, rendering yearly a *red* rose at the Nativity of St John Baptist Witnesses, as last Dated, 18 Oct

No 46 Indenture by Sir John, Abbot of Lesnes in the diocese of Rochester and the Convent there, to Adam and *Juliana* releasing to *them* its rent out of the tenement in *which they dwell which* was *Roger* de Mymmes and after David, *surigicus*, *in St* Alphege within Crepulgate on condition that Adam & Juliana enfeoff Launde, Ine & Wympole in a brewhouse in St Alphege so that the feoffees may hold it by *a* true title and defend it as much as possible and failing the abbot and convent may charge the rent as before

No 47 Grant by Abbot John and the Convent confirming to Adam & Juliana *all the* lands, tenements with easements and *15s* rent which they ought to have for a certain brewhouse which Juliane Payne sometime held which David "leche surgeon late of London demised to Juliane his relict *for* 43 years and which Adam & Juliane surrendered to us to hold the same for their lives paying 20*s* a year Given in the Chapter House of Lesnes, Monday in St Luke, 1378

ROLL 112

No 113 Grant by Juliana relict of Adam Rous, in pure widowhood and full power to John Ive (*or Ine*) Rector of St Michael Woodstrete Sir Laurence Wympole chaplain and Thos de Mordon, citizen and chandler, the tenement with buildings about it in which I dwell in Wodestrete which David le leche, citizen sometime my husband had by gift and feoffment of *Walter de Merstham*, Rector of St Alphege *who first had it by sale from David* and me the aforesaid Juliana sometime wife of Roger de Mymmes citizen and chandler whose will was enrolled in the *Husting on a plea of land Monday before St* Petronille, 24 Edwd III and on my death to be sold It is situated in width be[illegible] to the Dean & Chapter of St Martin the Great on the north, and a tenement of the Abbot of Lesnes on the south and reaches from Wodstrete on the east to the tenement of Lord de Ros on the west Warranty to feoffees Sealed before Brembre, Maior, John More & Simon Winchecombe, Sheriffs, *Ad Bame, Alderman, etc London* 20, *April* 7 Rich *II*

No 118 *Grant by same feoffees to Juliana for life* at a rose rent, she to keep it in good repair, that it may return to them in as good state as when received except by fire, sudden ruin or injury by tempest Witnesses as last Dated 23, April 7 Rich II

Clapham's History of Lesnes Abbey refers to a lease from Adam to Abbot John Haunsard, A D 1378 The original is in the Public Record Office (Ancient Deeds, Vol V A.7372) This deed is in a very imperfect state It is a notification by Dom John, Abbot of Lesnes and the Convent, that they have granted to Adam Rous, surgeon of the City of London and Juliana his wife a rent of 15*s* , which they receive out of a certain brewhouse late in the possession of David Leche surgeon, sometime citizen of London and the said Juliana, relict of the said David, to hold the same to farm for their lives rendering us . rent and performing the accustomed services due with reversion to the Abbot and Convent . of St Lucy, 1378

These deeds show that Juliana was a much married woman She certainly outlived Mynnes,‡ David, and Adam She did well out of each husband and it will be seen that Adam and she lived in David's old home

Adam Rous and two of his wives figure in the list of benefactors of the monastery of St Albans (Clutterbuck's Herts , Vol I , Appendix 6) Adam gave a noble cope with chasuble of red and white velvet (possibly velvet of Bruges) powdered with sprays and leopards set with pearls finely embroidered Beatrix and Juliana, *quondam uxores ejus*, gave to the high altar a chalice, parcel gilt, and to the monastery, a certain tenement in the street of Dowegate in London which was valued at 40*s* a year Of this value the sub cellarer was to pay 10*s* to the convent for a pittance on the anniversary of Adam's obit

The abstract of Adam's will in the Court of Husting is quite a short one, though it mentions the more important details The following is an abridged translation of the copy in the Commissary Court of London (Comm Court of London, Courtney, 62)

THE WILL

In the name and honour of the holy and undivided Trinity, Father, Son, and Holy Spirit, Amen On the XXVIIth day of April A D 1379 and in the 2nd year of King Richard II I, Adam Rous, *Surrigicus* & Citizen of London, sound of mind and body meditating on the ends of this order, make and constitute my testament in this manner First I leave, give and commend my soul to God my almighty creator & to Saviour King, & to Mary the ever glorious Virgin & to all saints and my body to be buried in the monastery of St Albans in the place there by me constituted I leave to the new work of St Pauls, London XX*s* I leave to be distributed by my executors on the day of my sepulture between the most weak & destitute poor for my soul & the souls of all the faithful departed viz 20*s* in the parish of St Alphege within Crepulgate, & another 20*s* in the church of St Albans I leave to the Friars Minors & Friars Preachers of London to pray for my soul, to each of them 20*s* I leave to the orders of Carmelites & Augustinians to pray for my soul to each of them 10*s* I leave to the abbey of St Albans on the day of my sepulture to make a pittance for the monks of the said abbey 40*s* To the high altar of St Alphege within Crepulgate 13*s* 4*d* To William Stodley a girdle with purse and a small knife which the Duke of Lancaster gave me

To Laurence Duram my executor 20*s* To the Rector of St Alphege within Crepulgate supervisor of my will 20*s* Item they cause to be placed about my [illegible] 5 [illegible] torches each to weigh 10 lb of wax to be burnt [illegible] the while divine office is celebrated for my soul & after my burial I leave 1 torch of the aforesaid 5 to be burnt while it lasts in the church of St Alphege, one in the same way in the church of St Paul, one in the church of St Mildret in the Poultry, one in the church of the Blessed Mary of Colcherche & one in the church of St Martin Orgar. I will and leave that my exors cause to be made 5 other round torches to burn about my corpse on the day of my burial and on the day of month's mind [2] And after the day of my month's mind that the five torches remain to the abbey of St. Albans And I will and ordain that those 5 torches and each of them thus made weigh 10 li of wax I will that my said exor cause to be made 12 torches of which each is to weigh 10 li and I will that 6 burn about my body in London on the day of burial & at my month's mind and be given to divers churches the most indigent afterwards according to the disposition of Juliane my wife & my exors And I will that other 6 torches burn at St Albans & that 4 may serve the High altar in the monastery to illumine the Body of the Lord & that the other two be taken & delivered to the church of St Peter in the town of St. Albans to illumine the Body of the Lord there.

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‡ Will dated 14th March 13[illegible] Court of Husting Roll 7[illegible]

To Juliane my wife all my tenement with two superstructures & all its belongings which I acquired of Cristine sometime wife of John Harpesfeld, citizen and shoemaker, situated in the parish of All Hallows, called le Mochale in London, namely between the street called de Douegate on the west part & a lane called Cosmeslane and the tenement of Bartholomew Frestling sometime Roger de Waltham's on the east part & a tenement of the said Bartholomew de Frestling sometime Wm. de Rokele's on the south part To have and to hold all the said tenement with houses, superstructures & all its belongings to the said Juliane for the whole of her life rendering to the capital Lords of the fee the service due & of right customary And after the death of the said Juliane I will that all that said tenement with its appurtenances may wholly remain to the abbey & convent of St Albans on the following condition, viz that they, the abbot & convent yearly on the day of my anniversary celebrate the divine office by name for my soul as it is accustomed to be celebrated on the anniversary of an abbot And for the soul of my wife Juliane in the said monastery & for the souls of the faithful departed in perpetuity, and that 10s from the rents of the said tenement be expended on the day of my anniversary and Juliane my wife's, between all those monks who were then there present about my said obit. To have & to hold the whole tenement etc to the abbot & convent & their successors in pure and perpetual alms, paying to the capital Lords of the fee the services due & accustomed

I leave to Juliane my wife those two shops with belongings situated in la Roperye of London that I acquired of the said Cristine & from Thos. Hindene in the parish of All Hallows called le Mochele in London, viz between the tenement of John Amours on the north and a tenement called le hoode on the hope on the east and the King's way of La Roperie on the south and a tenement sometime Isabell de Preston on the north, to have and to hold to Juliane for the term of her life and after her death in pure and perpetual alms to the abbess & convent of the abbey of St Clare without Algate in aid for the clothing of poor nuns . That they may have my soul & the souls of all the faithful departed in their divine prayers, to have and to hold etc

I leave to Juliane my wife the reversion if it chance of my tenement in Cornhulle after the death of William my brother & Johane his wife . and after the decease of the said Wm , Johan & Juliane I will that the whole tenement may remain to the house of the Salutation of the Mother of God, otherwise the Carthusians next London, that the religious men of the said house may have my soul and that of Juliane and those of all the faithful dead in their daily prayers . I leave to William Bowiere my son and Lore his wife a tenement I acquired of John Ingram in the parish of St Andrew upon Cornhulle, and to the heirs of their bodies lawfully procreated, with remainder to the Carthusians

I leave to the Prior & Convent of the church of St. Bartholomew of Westsmethfeld in the suburb of London the reversion of all those tenements with houses, shops, gates, walls and gardens with all their belongings they ought to have after the death of John Hertishulle, clerk, in the parish of St Andrew Holborn, in perpetuity and I leave to the said prior and convent the reversion of all those tenements etc which ought to fall to me after the death of the said John Hertshull in the parish of St. Mildrede London, & St. Edmund the King in Lumbard Strete & Borcheneslane . . . and 40d yearly rent which I acquired of Cristine relict of John Harpesfeld & Thos. Hynden, overseer of his will, arising from a small plot annexed to a shop in the parish of All Hallows the Great in La Roperye upon the corner of the King's way of Douegate, to be expended in wine among the convent to remember each year my anniversary, to have, hold and receive the said 40d. yearly at the feasts of Easter and St Michael by equal portions . . I leave the wife of Simon my brother and their children 13s To Walter my brother, 20s John my cosen, 20s The three sons of Wm Bowier my son, 20s Rich Beir, 13s 4d To two monks, my kinsmen, 30s. John Blisse, my kinsman, 6s 8d Thos , son of Wm Rous, my brother 13s 4d Cristine Harpfeld 6s 8d John Abbot, my house servant 26s 8d John Burde 6s. 8d Residue to wife Juliana, Walter Stodeleie, Canon of St. Martin the Great & Laurence Durham, chaundelore, of London & the supervisor of my will I make the Rector of St Alphege.

Wit Sir John, Rector of St. Alphege, John Hare, Tho Hereford, Wm Tayllour, Robt Shereman, Wm. Asheburne, clerk, citizens of London. I leave for the expenses of my sepulture £20 To John Baylond 6s 8d To each chaplain celebrating in St Alphege on the day of my burial 12d To the Master Clerk of the parish 12d To the sub-clerk 6d To the sustentation of the light of the great cross in the said church 6s 8d To the repair of the light of St. Katherine there, 3s 4d. Proved 10, Kal July

Rous's will is one of the earliest proved in the Commissary Court and is of unusual length It will be seen that he was taking no chances with regard to the good of his soul and it is obvious that he must have had a very good opinion of himself or he would hardly have stipulated for an anniversary service of the same quality as that for a mitred abbot. The early form of a repairing lease is of great interest.

I owe to my friend Mr Harvey Bloom the transcripts of the will and other documents.

REFERENCES

1 Duke of Lancaster is John of Gaunt
2. The month's mind was the memorial service one month after the funeral.

THOMAS YOUNG

Thomas Young is remembered to-day for having established the undulatory theory of light, and for his success in solving the mystery of Egyptian hieroglyphics At the suggestion of Lord Rutherford, Mr. Frank Oldham has recalled the main facts of his life and his chief contributions to physics and literature.[1] Thomas Young was born in 1773; it is stated that he could read at the age of two. His parents were Quakers, evidently well off and much care was taken with his education We are told that on leaving school at about 12 Young applied himself to the study of the grammar of such languages as Hebrew, Chaldean, Syriac, Samaritan, and Persian. At the age of seventeen he had mastered the Principia and Optics of Newton, Linnæus's botany, and the systems of chemistry of Lavoisier and Nicolson, and was also adept at Greek This early training in languages, mathematics, and science was an excellent preparation for his subsequent career, but careful observation and a practical turn of mind were also responsible for his discoveries in physics. Mr. Oldham says that Young is an outstanding example of a man in whom classical training had not warped the appeal of natural phenomena and their scientific explanation. At the same time Young's education had a serious defect because he missed the moulding influence of other minds such as a less isolated training would have given him and throughout his life he failed to talk down to his audience.

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[1] Thomas Young, F R S, Philosopher and Physician By Frank Oldham, M.A , B.Sc , A Inst P London Edward Arnold. 1933. Pp 159.

In September, 1793, Young entered as a student at St. Bartholomew's Hospital and his full notes provide us with accounts of the method of teaching there employed and also of those responsible for the course. He studied anatomy, physiology, and botany and the practice of medicine and midwifery. The practical anatomy course included dissection of an eye; Young was given the eye of a recently killed ox and perceived that the ciliary muscles attached to the lens were still active and were compressing the lens. He had already studied optics, and he saw that here lay an explanation of the process of accommodation attributed by contemporary medical opinion to alteration in the length of the eyeball. The outcome was a paper by Young which was published in the Transactions of the Royal Society in 1793 and secured his election to its fellowship at the early age of 21. He continued his medical studies at Edinburgh and Göttingen and in 1797, when he was 24, he matriculated at Cambridge, where we are told that the junior undergraduates avoided him and dubbed him "*Phenomenon Young*." Young's studies at Cambridge were evidently profitable; he was able to complete his work on the eye as an optical instrument and to begin those researches on sound and light which subsequently placed him in the foremost rank among the scientists of his day. After leaving Cambridge in 1799 he moved to Welbeck Street, and in 1801 became Professor of Natural Philosophy at the Royal Institution. His lectures there were not appreciated by his audiences, and in 1803 he relinquished the post, his chief desire being to establish himself as a medical man. It should be noted that although the Royal Institution lectures were not successful when delivered, they were published in 1807 and have received the highest praise from informed posterity.

In 1808 Young took the Cambridge M.D. and in January, 1811, he was elected as a physician to the staff of St. George's Hospital. Here also, although he conscientiously carried out his duties Young failed to achieve success; his real talents lay elsewhere, though he was slow to recognise this and disappointed at his failure. In 1807 he wrote to Davy: "In many other departments of science I have been able to draw conclusions from a comparison of the experiments of others which I should have been much longer in discovering by investigations of my own, and why not in Physic?" The result of these labours, published in the form of a book entitled "Introduction to Medical Literature," is now forgotten. Amongst his other medical publications is a "Practical and Historical Essay on Consumptive Diseases." Eventually he seems to have found a more congenial line in life assurance statistics in which he improved the current method of computing the expectation of life. Latterly Young gave up private practice and occupied himself chiefly with scientific work. He died in 1829, aged 56, and a monument to his memory was erected in Westminster Abbey, where he is described as having "First established the undulatory theory of light and first penetrated the obscurity which had veiled for ages the hieroglyphics of Egypt."

MERRIE ENGLAND[1]

When was England first known as "merrie" and for which reasons did she earn her fame? No doubt accurate answers could be forthcoming from scholars; but all can see, after reading Mr. Bryant's book, that England 270 years ago had a claim to the sobriquet. It was a land of good temper; food in plenty made hospitality a popular virtue; sporting instincts were easily satisfied; the love of music was universal, and to make music was a common achievement. Rough compared to France and unlettered compared to Italy as the manners and accomplishments of the ruling English classes might be, the general population must have been as cultivated as that of the leading nations, with a greater capacity for enjoyment.

The passages in this attractive book which call attention to medical affairs are neither many nor important. In a well-informed chapter entitled "Religio Medici" we get examples of the crudity of medical knowledge which prevailed just before the rapid arrival of scientific methods, and it is with a right sense of proportion that the author gives his few medical details. But the picturesque descriptions of manners and scenes obtrude one side of medicine insistently upon the reader's attention—the cities, and probably the Capital City to an extreme degree, must have been foul; instead of being shocked at the mortality statistics we must wonder that the toll of life was not heavier in the massed centres of infection.

WORLD-WIDE HYGIENIC PRECAUTION

At the October session of the permanent committee of the Office International d'Hygiène Publique there was the usual free interchange of information relating to epidemic disease and frank discussion by national experts of all the relevant facts with a view to limiting the restrictions on shipping and other forms of traffic to the minimum that can be justified on epidemiological grounds.[1] Largely through the efforts of Sir George Buchanan this policy found expression in the International Sanitary Convention of 1926 and it is gratifying to note that the principles therein accepted have recently been extended to the sanitary control of aerial traffic. Proposals were made at this session for the abolition of bills of health and consular visas, for attention to rat-proofing of ships as a means of avoiding the necessity for periodical deratisation, for further efforts to discover the significance of vibrio carriers and to devise an appropriate treatment, and for the treatment of merchant seamen suffering from venereal disease.

The convention for aerial navigation (1933) awaits ratification by six more countries before coming into force, but the required number is likely soon to be obtained. In the meantime the committee is endeavouring to arrange uniform regulations in the countries over which air traffic passes. In applying measures against yellow fever, difficulty arises from the discovery that in the interior of Africa and South America there are vast areas in which, taking the "mouse-protection test" as a criterion, yellow fever is endemic, but in which no case of yellow fever has ever been reported. One of these "silent areas" lies in the southern part of the Anglo-Egyptian Soudan and this year occurred a fatal case diagnosed as yellow fever. Intensive search for clinical cases is now being made in other silent areas; in this task the histological examination of specimens of liver tissue obtained by "viscerotomy" or by the autopsy of persons dying from fevers of less than ten days' duration is regarded as a useful aid in diagnosis. In precautions against plague it is impossible to rely on vaccination for the protection of individuals.

Two different methods of protective vaccination against yellow fever are being tried in the field. In one of these living neurotropic virus fixed for mice is used in combination with immune serum. In the other the same living virus is used alone in different stages of attenuation. In the present state of knowledge the use of living virus without the addition of immune serum seems to involve risk.

Search continues for a bacteriological method of identifying the cholera vibrio which will give the same results when employed by workers in any part of the world. Concerted work in England and India suggests that "O" agglutination is the method of identification upon which most reliance can be placed and attempts are being made to prepare an "O" antigen in a dried form in which the "H" fraction has been destroyed by heat. Such an antigen should make it possible for workers in any part of the world to obtain precisely comparable results. The matter is of practical importance since, even in the absence of clinical cases of cholera, agglutinable and non-agglutinable vibrios are sometimes found at El Tor in pilgrims returning from Mecca and doubt arises whether these vibrios are to be regarded as the true cholera vibrio or not.

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[1] The England of Charles II. By Arthur Bryant. London: Longmans, Green and Co., Ltd. 1934. Pp. [illegible]

[1] The report can be had on application to the Office International at 195, Boulevard St. Germain, Paris.

The new procedure for preparing *small-pox* vaccine by cultivation was discussed; the culture medium is the allantoic membrane of the incubated hen's egg. The lymph obtained by this procedure seems to be identical in its effects with ordinary calf-lymph, but trials on a large scale will be necessary before a considered opinion can be given.

WHITAKER'S ALMANACK

THE Almanack for 1935 contains, as the title-page indicates, a vast Amount of Information, and medicine probably receives its fair share of attention. There are 26 entries under the caption Medical and 44 under Hospitals in the index; the medical section on professional education is brief but sufficient; the names may be found of medical staffs of Government departments, and of medical officers of health. These are for the public. The value of the Almanack to the medical profession arises from the rest of the 26,000 references in the index. Whitaker is one of the few works of reference which keeps strictly up to date, and the reader will not seek in vain for the personnel of such new statutory bodies as the Unemployment Assistance Board. We are not surprised to learn that the Almanack is increasing the number of its readers, especially among adolescents. The price of the full edition (1000 pages), in the familiar red and green cloth cover, is 6*s*

NEW PREPARATIONS

"SEPTER" OUTFIT.—We have received from National Drug Industries Ltd., Emmott-street, London, E 1, a little outfit devised for the alleviation and cure of nasal catarrh. The treatment is novel, consisting of the introduction into the nostrils of small containers holding an antiseptic cream, when the temperature of the nostrils and the act of breathing leads the vaporised medicament into the nasal passages

ANAQUINTINE —This preparation is put on the market by the Anglo-French Drug Co, Ltd., 11–12, Guilford-street, W.C.1. It contains thymoform, eucalyptol, ephedrine, and certain aldehydes, and has been found of value when instilled into the nostrils in colds, catarrh, and coryza. It has been used also as an accessory in the treatment of influenza and whooping-cough where disinfection in the nasal passages is particularly called for. The active principals are made up in a bland vegetable oil and the preparation is supplied in a conveniently shaped bottle fitted with a drop-counting instillator. The evidence supplied warrants trial for the preparation, having regard to the obstinacy of the conditions it has been devised to remedy

KEY BRAND GRAPE JUICE —We have received a specimen bottle of this preparation which is the unadulterated juice of South African grapes, produced at the instance of the Cooperative Wine Growers Association of South Africa Viticulture is now an important industry in the Cape Province of South Africa, and the placing of this preparation on the market is an attempt to make the properties of the grape available in other forms than wine and spirit. A certified analysis is supplied by the Association, and attention is called, by many quotations from books and journals, to the therapeutic value of unadulterated grape juice Further, a very pleasant beverage can be obtained by admixture with water The agents for the sale of K W V. Grape Juice are Dominions Producers Sales, Ltd, Sentinel House, Southampton-row, London, W C.1.

Vacancies

For further information refer to the advertisement columns

Bath, Royal United Hospital —Hon Physician

Belfast, Queen's University.—Dunville Chair of Physiology £900 Also J C White Chair of Biochemistry £800

Birmingham, Canwell Hall Babies' Hospital —Res M.O At rate of £250

Birmingham Children's Hospital —Res M O £175

Birmingham, Selly Oak Hospital —Jun. M O. £200.

Bolton Royal Infirmary.—H S. £125.

Bristol Eye Hospital —Asst Res H S. £100

Burton-on-Trent General Infirmary —Cas. O. and H P. £150

Bury County Borough —Asst M O.H £500.

Cardiff, Welsh National School of Medicine —Jun Asst for th Med Unit At rate of £250

Chelmsford and Essex Hospital —Hon. Anæsthetists.

Dover Borough —Asst M O.H £750

Exeter, Devon Mental Hosp, Exminster.—Jun. Asst M O £350.

Finsbury Metropolitan Borough —Asst M O H and Tuber O £750

Gloucestershire Royal Infirmary and Eye Institution —Res Surg O At rate of £200

Guy's Hospital, S E —Two Hon Anæsthetists

Harrow Urban District Council —Asst. M.O H £600

Hospital for Sick Children, Great Ormond-street, W C.—Out Patient Med Reg £250 Also Surg Reg £200

Leicester City General Hospital —Res M O At rate of £300

L C C Hospital, Ducane-road, Hammersmith —Three H P's Also Two H S's

London Hospital, E —First Asst in Dept of Physical Medicine £150

Manchester, Ancoats Hospital —Res Surg. O £200

Manchester Hospital for Consumption and Diseases of the Throa and Chest —Res M O for Throat Dept. £200

Manchester, Northern Hospital for Women and Children —Sen and Jun. H S. £130 and £80 respectively

Maudsley Hospital, Denmark Hill, S E —Asst M O £470

Newcastle-upon-Tyne Eye Hospital —Jun Res H S £100

Radium Beam Therapy Research, Radium Institute, Ridin House-street, W.—Asst M O At rate of £250

St George's Hospital, S.W.—Res Anæsthetist £100

St Mary's Hospital, W —Third Asst Pathologist. £250 Physician for Nervous Diseases Also Clin Asst in Dept fo Dis of Skin

Staffordshire General Infirmary —H S At rate of £200.

Surrey County Council —Asst M.O £600.

Walthamstow, Borough of —Temp Dist M O. 11 guineas pe week

West London Hospital, Hammersmith-road, W.—Hon. Asst Radiol

Worcester County and City Mental Hospital, Powick —Asst M O £350

York, Friends' Retreat —Jun. M O. £300.

Medical Referee under the Workmen's Compensation Act 1925, for the Hanley and Stoke-upon-Trent, Leek, Newcastle-under-Lyme, Stone, Lichfield, Stafford, Tamwort and Uttoxeter County Court Districts (Circuit No 26) wit a view to his employment in ophthalmic cases Application should be addressed to the Private Secretary, Home Office Whitehall, London, S W 1, before Jan 5th, 1935.

CANADIAN MEDICAL DIRECTORY —We have received from the Canadian Medical Publishing Co of *Montrea* the sixteenth edition of the Canadian Medica Directory for 1934–35 This issue has been agreeably improved by the addition of a table of contents with page references. The price remains the same at 7 dollars in paper cover and 10 dollars in cloth.

BURBERRY SALE started this year on Dec. 10th with a wide choice in weatherproofs, overcoats, and sports wear. A copy of the sale catalogue wil be sent to any medical man or woman on application to Burberrys Ltd., Haymarket, London, S.W.1.

A ONE-HANDED KNIFE —We have received from Messrs Reilly and Marris Ltd (Shell-Mex House, London, W.C 2) a knife which can readily be used with one hand. The blade concealed in the handle can be slid forward into one of four positions and locked there by simply pressing or releasing the button. Emphasis is laid on the absence of any danger of trapping the fingers or breaking the nails, but its outstanding value would be for those who require to use a cutting instrument and have only one hand to use it The price of the Marris Slide Blade Knife with steel blade is 2*s*. 6*d*.; with stainless steel blade, 2*s*. 9*d*, from any dealer.

of percussion It enables us to detect with certainty minor degrees of cardiac enlargement which percussion fails to reveal, and by telling us which chambers of the heart are affected, it provides a clue to the cause of the enlargement There are, I believe, few cases of heart disease in which we can afford to dispense with the additional information given by electrocardiographic and radiological investigations

Therapeutics

DRUGS

The value of digitalis in the treatment of patients with œdema and a rapid and irregular pulse was clearly recognised by Withering 150 years ago This important discovery subsequently led to the indiscriminate prescribing of digitalis in all types of heart disease To Mackenzie is due the credit of pointing out that this was wrong His researches proved that the "pulsus irregularis perpetuus" resulted from fibrillation of the auricles, and not from "mitral disease," as was generally believed He showed further that dramatic results from digitalis therapy were obtained only in this type of arrhythmia

The standardisation of digitalis by biological assay paved the way for Eggleston's work on the massive dose method of oral administration The amount necessary to produce full digitalisation varies with the body weight of the patient, and Eggleston found that for a man of 11 st about 32 grains of the powdered leaf or 6 drachms of the tincture were required He showed further that, in cases of urgency, provided that the patient had not previously been taking any drug of the digitalis group one third to one half of the total quantity required could safely be given as an initial dose, followed six hours later by one fifth to one quarter, and after another six hours by one-eighth to one sixth By this means full digitalisation can be produced in 18 hours as compared with five or six days by the dosage usually employed

Strophanthus as an alternative to digitalis is now much less commonly prescribed than in days gone by The results obtained from strophanthus are no better than from digitalis, and its action is much less certain This appears to be due to irregular absorption of the drug from the alimentary tract On the other hand intravenous strophanthin is a reliable remedy in urgent cases where immediate results are essential But even in these cases digitalis given by the massive dose method has largely superseded strophanthus

In the treatment of fibrillation, digitalis is still pre-eminent, though in suitably selected cases, its younger rival quinidine is superior, in that it not merely controls but actually abolishes the fibrillation The action of quinidine in auricular fibrillation is one of the few examples in therapeutics of a drug producing a radical alteration in the mechanism of an organ Unfortunately it is only in those cases in which the fibrillation is of recent origin, and where the heart muscle is sound, that normal rhythm, when restored by quinidine, is maintained Heart failure with œdema is a definite contra indication to the use of the drug, for, when the fibrillation is of long standing the danger of cerebral embolism is increased by the restoration of normal rhythm, and it is safer merely to control the ventricular rate with digitalis

Another romance of therapeutics is the control of the acute cardiac and mental crises of Graves's disease by means of iodine I had the good fortune to spend a few days at the Mayo Clinic in 1924 shortly after Plummer had published the results of his work on this subject The introduction of iodine therapy has revolutionised the treatment of Graves's disease It has so reduced the operative risk and the post-operative complications that subtotal thyroidectomy has become the method of choice in the majority of these cases, while, as a life saving measure in cases of extreme urgency, its action is comparable to that of insulin in diabetic coma

The mercurial diuretics have attracted considerable attention since the war Novasurol given intravenously, in conjunction with ammonium chloride by mouth, gave excellent results, but symptoms of mercurial intoxication were not infrequent Salyrgan has proved much less toxic and equally efficacious It may be used over long periods of time and will often provoke a diuresis amounting to 100 to 200 ounces in 24 hours in a patient whose output had previously been less than a tenth of that amount Salyrgan should be given intravenously, every four days (2 c.cm of a 10 per cent solution diluted to 10 c cm with normal saline) It is especially in those cases where the heart failure is associated with normal rhythm that the pre-eminence of salyrgan over other diuretics is so striking

On the opposite side of the account one must note that discredit has been thrown on certain drugs which used to be universally employed The use of nitrites in the routine treatment of angina pectoris is a case in point Carefully controlled observations by *Evans and Hoyle* have shown that continuous treatment with these drugs produces no effect whatsoever in diminishing the frequency of attacks, equally good results being obtained with a simple placebo Where they are effective is in aborting attacks, and in preventing individual attacks if given at such times as an attack is expected (i e, before some unavoidable exertion) Their action is so short-lived that they do no good if given in a routine manner at regular intervals throughout the day

Oxygen therapy has made great strides in recent years In 1915 the treatment of soldiers suffering from chlorine gas poisoning became a problem of great urgency, and Haldane introduced the closed mask method for the administration of oxygen This was a striking advance on the old *open method*, by which it was quite impossible appreciably to raise the tension of oxygen in the alveoli of the lungs As an alternative to the closed mask, a nasal catheter or other similar device may be employed Benefit from oxygen therapy is only to be expected in those cases in which anoxæmia is attributable to defective aeration of the blood in the lungs. It is therefore chiefly in heart failure secondary to such conditions as bronchitis, emphysema, or pneumonia that this type of treatment is of value It cannot be expected to relieve a patient whose cyanosis is due to a sluggish circulation, or to shunting of the blood from the right to the left side of the heart as occurs in some congenital heart lesions In cases such as these the blood is fully oxygenated in the lungs, and the defect lies elsewhere

SURGICAL TREATMENT

I have already referred to the cure of Graves's disease by subtotal thyroidectomy It is important that this measure should be carried out promptly, especially in elderly patients, if we are to prevent permanent cardiac damage During the past two years total thyroidectomy in patients with advanced heart failure due to causes other than thyrotoxicosis has been performed in a considerable number of cases, mostly in America The rationale of this procedure is that whereas the reserve of the damaged heart cannot meet the oxygen requirements of the patient when his metabolism is normal, it may suffice to do so when the metabolic rate is considerably reduced By total thyroidectomy the patient is rendered myxœdematous and his metabolism can then be suitably controlled by the oral administration of thyroid extract The results hitherto obtained are encouraging, and considerable clinical improvement, as shown by the disappearance of œdema or of anginal symptoms, has been reported. The procedure is of course merely palliative, but in some cases it enables a patient previously bed-ridden to enjoy a greater amount of liberty.

Surgical measures for the relief of pain in angina pectoris have been practised by various workers both on the Continent and in America during the past 20 years Good results have been obtained by the injection of alcohol into the dorsal root ganglia, and various modifications of the operation of cervical sympathectomy have been tried Hitherto these procedures can hardly be regarded as having passed the experimental stage We are at present handicapped by our lack of knowledge concerning the afferent pathways by which cardiac pain reaches the brain. It is difficult to foresee what results these researches may yield ; for, although the relief of pain is a fundamental consideration, the pain in angina of effort does serve a useful purpose as a danger signal It enables the patient to know what he can do with safety, and clearly defines his limitations Unless, therefore, we can also treat the underlying condition responsible for producing the pain, we may be putting into his hands a two-edged weapon.

On the other hand, very encouraging results have been obtained during the past few years in the treatment of thrombo-angiitis obliterans by lumbar sympathectomy. This operation abolishes spasm in the affected vessels, and if undertaken sufficiently early may result in a complete cure. It seems possible that, in suitably selected early cases of angina pectoris, coronary spasm might be similarly prevented.

The Present-day Conception

Our present conception of heart disease is based on a long series of clinical and experimental observations dating back to the time of Harvey's discovery of the circulation of the blood. As a result of these observations certain definite facts have been established and will hold good for all time In addition to the facts, there have been put forward, from time to time, various hypotheses—that is to say tentative explanations to account for clinical and experimental observations New observations by adding to our knowledge often render the old hypotheses untenable, and new hypotheses have to be formulated to take their place All these facts and hypotheses, however, are merely the bricks of which the edifice of cardiology is built ; and it is not the bricks themselves but the manner in which those bricks are put together that gives to the building its style and character. If we stand back and view the completed structure as a whole, certain features catch our eye while others appear insignificant, and it is only by standing sufficiently far off that we are able to appreciate the relative values of these different features and to see them in their true perspective Similarly, it is only by the lapse of time that the new facts and hypotheses can assume their true proportion and be harmoniously blended with the old.

In cardiac edifices built during the past 50 years three distinct styles of architecture are discernible. At the beginning of that period the architect was a morbid anatomist, who was primarily interested in structural lesions, more especially defects of the heart valves This was the epoch of the murmur hunters. Towards the end of last century, medical opinion began to rebel against the dictatorship of the stethoscope ; it was obvious that the significance of murmurs had been over-emphasised and that other signs and symptoms were of more importance Clinicians tended to hark back to the ideas of the pre auscultation era, and buildings in a Renaissanc style began to crop up. In these the older ideas wer revived and amplified More attention was paid t symptoms and less to physical signs. The respons of the heart to effort was taken as the measure of it efficiency Mackenzie was the leading exponent o this school His central theme was heart failure.

Since the war the style of the cardiac edifice ha again been modified. Whereas, for Mackenzie, hear failure was the central feature, we now believe tha the underlying cause of the heart failure is even mor important. Take for example the question of auricula fibrillation leading up to congestive heart failure Mackenzie was the first to point out that auricula fibrillation was the cause, and not the result, of hear failure, and that this arrhythmia was responsible fo the majority of cases of heart failure with venou engorgement. Auricular fibrillation therefore came to take precedence in Mackenzie's view over all other features, save the heart failure itself, because it was regarded, and rightly regarded, by him as the precursor of that condition We now know that auricular fibrillation may be merely a transient disorder. That type of fibrillation, for example, which is attributable to thyrotoxicosis can generally be abolished by subtotal thyroidectomy ; and provided the hyperthyroidism be adequately controlled, normal rhythm may not only be restored, but permanently re-established It is for that reason that the underlying cause of the disorder has come to be regarded as even more important than the disorder itself. Whereas the diagnosis, in Mackenzie's day, would have been "*heart failure* resulting from auricular fibrillation," it is now "*thyrotoxic* auricular fibrillation with heart failure."

To take another example, heart failure supervening on an attack of acute bronchitis may disappear when the bronchitis clears up ; whereas that which develops in the later stages of cardio-aortic syphilis is always progressive. The important features here are not the heart failure but the bronchitis and the cardio-aortic syphilis. The heart failure is merely an episode in the course of the disease, in the one case transient, in the other terminal.

To-day we regard ætiology as the most important consideration in the diagnosis of a cardiac case, and it is convenient to classify patients complaining of cardiac symptoms in three groups :—

(1) Those who have permanent structural lesions.

(2) Those who are suffering merely from some toxic affection of the myocardium

(3) Those whose symptoms are due to an anxiety neurosis.

This classification is of great importance from the point of view of prognosis, since the toxic and neurotic elements are generally amenable to treatment, whereas the structural lesions produce a permanent disability. In most cases however two if not all three factors—structural damage, intoxication, and neurosis—are present, though in varying degree. Anginal symptoms in a patient with coronary disease, for example, may be aggravated by dietetic and other indiscretions—e g., tobacco—while the element of neurosis can hardly ever be entirely lacking from such a case. Similarly the symptoms in a patient with some slight congenital or valvular defect may be chiefly attributable to neurosis, for which his medical attendant or some sympathetic but over-anxious relative is to blame The capacity to assess the importance of each of these several factors in the particular case, and to regulate treatment accordingly, is the measure of the ability of the physician

CONTINUOUS SUCTION DRAINAGE

WITH AN ACCOUNT OF A CASE OF BILATERAL EMPYEMA TREATED BY IT

By Magnus L Thomson, M B Aberd

MEDICAL REGISTRAR SALFORD ROYAL HOSPITAL LATE RESIDENT MEDICAL OFFICER, ROYAL MANCHESTER CHILDREN'S HOSPITAL

THE material required for the construction of the apparatus (Fig 1) consists of two Winchester bottles (B and C), a drainage bottle (A) a glass irrigating reservoir (D), three rubber stoppers to fit bottles A, B, and C, some lengths of glass tubing a Y shaped glass connexion, a T-shaped glass connexion, rubber pressure tubing, and some spring clips

The drainage bottle (A) is placed on a table at the bedside, together with one of the Winchesters (B), while the irrigating reservoir (D) is placed on an upright stand attached to the table The second Winchester (C) is placed on the floor beside the table Bottle A is fitted with a rubber stopper through which pass two short lengths of glass tubing Bottles B and C are similarly fitted with rubber stoppers through each of which pass one long and one short length of glass tubing Bottles B and C act as syphon bottles—water being made to syphon from B into C The suction of air into B as the water leaves it provides the motive force of the apparatus This force is supplied to the pleural cavity through a catheter which is inserted between the ribs Bottle A acts as a drainage trap, while a side connexion from the catheter, to the reservoir, D, enables intermittent irrigation to be carried out Communication between the various units of the system is effected by rubber tubing

The end of the catheter is attached to a Y shaped glass connexion, one limb of which is connected by rubber tubing to one of the glass tubes passing through the stopper of bottle A, while a second length of rubber tubing attaches the other limb to the reservoir D Bottle A is of the suction type—i.e., it contains a glass outlet at the foot Over this outlet is attached a short length of rubber tubing of sufficiently wide diameter with its free end closed by a spring clip From the second of the glass tubes, passing through the stopper of bottle A a short length of rubber tubing makes connexion to one end of the horizontal limb of a T-shaped glass connexion The other end of the horizontal limb of the T connexion is attached by a short length of rubber tubing to the short glass tube passing through the stopper of bottle B To the dependent limb of the T connexion is attached a short length of rubber tubing which acts as an air leak tube During suction this tube is clipped The long glass tube passing through the stopper of bottle B is attached by a length of rubber tubing to the long glass tube of bottle C Bottle B is filled with water Some disinfectant fluid is run into bottle A Spring clips are distributed as shown in the diagram Seven clips are required

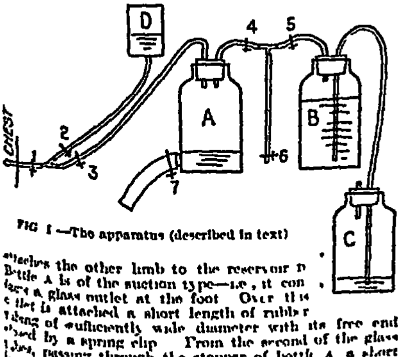

FIG 1—The apparatus (described in text)

TECHNIQUE

The system is essentially a closed one The smallest air-leak in any part of the apparatus will either render the apparatus useless or so diminish the force of the suction in the pleural cavity as to make the drainage inefficient In our earlier experience the repeated development of such leaks provided the main difficulty in maintaining effective suction The apparatus, as described, is designed to avoid this difficulty, and by using the following technique it has proved thoroughly efficient (Fig 2)

Bottles A and B are sealed in the following fashion The glass tubes *passing through the stoppers are not* right angled but are simple straight tubes inserted through holes bored in the rubber stoppers The rubber tubing attached to them is pushed over their free ends until it comes in *contact with the top of the* rubber stopper Round the neck of each bottle a broad cuff of adhesive tape is applied into which is poured melted wax On setting, this effectively seals the joints (*a*) between the stopper and the bottle, (*b*) between the glass tubes and the stopper (*c*) between the rubber tubing and the glass tubing entering the bottle

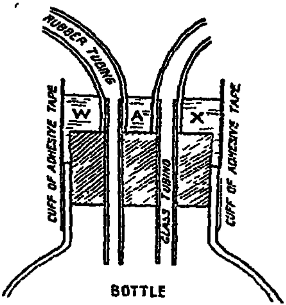

FIG 2.—Diagram showing the way in which leakage at the mouth of the bottle is prevented

As drainage proceeds, the water in bottle B slowly syphons into bottle C, and after an interval of some six to ten hours will require to be returned to bottle B to allow suction to continue To carry out this manœuvre clip 4 is closed and with clips 5 and 6 *open bottle C is* held above the level of bottle B and the water syphoned back into B The air in B escapes through the open air leak tube attached to the dependent limb of the T connexion between bottle A and bottle B

The drainage bottle A will also require to be emptied after it has filled with drainage fluid To do this clip 3 and clip 5 are closed clip 4, clip 6 and clip 7 opened The drainage then runs out through the outlet opening of bottle A When bottle A has emptied, a little disinfectant fluid is run in Clip 6 and clip 7 are then closed and clips 5 and 3 opened In this way it is possible to keep the apparatus working without disturbing the sealed bottles A and B

Air leaks may occur when rubber tubing is attached to glass connexions In this case some narrow adhesive tape bound over the leaking union effectively closes it The joint between the drainage tubing and the glass outflow opening at the foot of bottle A must also be airtight This can be conveniently sealed by painting the connexion with varnish

The apparatus having been *carefully* prepared and tested to exclude air leaks, the catheter is inserted into the pleural cavity Pressure rubber tubing should be used throughout

Insertion of the catheter.—The catheter used is a No 10 Dowse's type of self retaining catheter. Under local anæsthesia an incision is made in the skin and a trocar and cannula just large enough to allow the catheter is inserted into the empyema cavity The trocar is then withdrawn and the catheter inserted by means of an introducer The introducer is withdrawn and the cannula removed. Precautions are taken to prevent air entering the chest

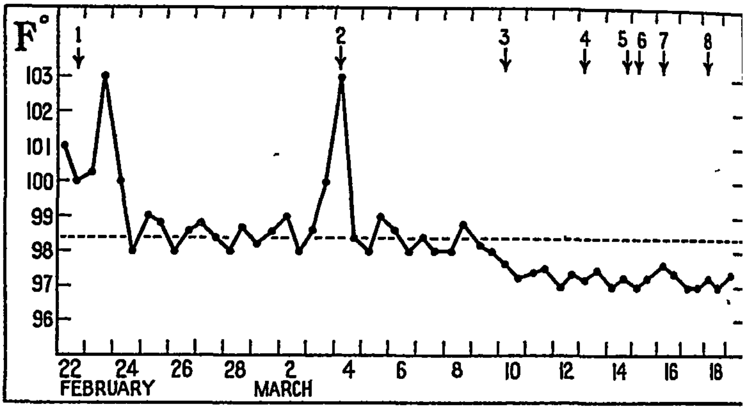

FIG 4.—Temperature chart 1 = closed drainage started (left side) 2 = close drainage started (right side) 3 = catheter removed from left side 4 = woun on left side closed without drainage 5 = catheter removed from right sid 6 = patient allowed up 7 = patient walking 8 = wound on right side close without drainage

The dressing.—The dressing at the chest wall must be made air-tight To do this, pledgets of gauze or cotton-wool are soaked in collodion and applied in successive thin layers round the catheter. The dressing should have a diameter of about three inches Collodium acetonum is used as this sets quickly and efficiently. A bandage is applied to hold the dressing in place The catheter is then connected to the apparatus and suction commenced.

Management during treatment—During suction all the spring clips are left open except clips 2, 6, and 7 No irrigation is carried out for at least six hours after the dressing has been applied Subsequently the empyema cavity is irrigated every two hours by day and every three hours by night. During irrigation clip 3 is shut and clips 1 and 2 open Dakin's solution is used for the irrigating fluid and the level of fluid in the reservoir D should never be more than eighteen inches above the opening in the chest wall Irrigation is carried out more frequently if necessary, the main indication being to maintain free drainage

The quantity of fluid run in is controlled by its effect on the patient Coughing or pain is an indication to stop Should the patient prove unusually sensitive, the fluid should be warmed and run in very slowly The progress of the case may be observed by comparing the quantity of Dakin's solution used with the quantity of drainage recovered from the bottle A each day For this purpose it is an advantage to have the reservoir D graduated It is advisable to keep the side connexion to the reservoir D as near to the catheter as possible In this way the minimum of pus is washed back into the empyema cavity during irrigation.

The following *difficulties* may be encountered .—

(1) *Blockage of the catheter*—Milking the rubber tubing either towards or away from the chest usually overcome this difficulty Should it fail it may be necessary t disconnect the catheter and syringe it through with little Dakin's solution

(2) *Air leaks in the apparatus*—These do not occur i the apparatus has been carefully constructed It may b necessary to reseal one of the bottles The leak is locate by first closing clip 5 and observing if the water level i B drops If it does, bottle B is resealed The sam procedure is followed with clip 5 open and clip 4 closed and again, with clip 4 and clip 5 open and clip 3 closed.

(3) *Non-airtight dressing at the chest wall*—The dressin must be replaced and irrigation discontinued for six hour

(4) *Restlessness of the patient*—The presence of th catheter is usually well tolerated and restlessness is readil controlled by sedatives

Two *complications* must be considered. (1) Blood stained washings if the washings are only tinge with blood, the suction is reduced by raising bottle one or two feet from the floor; if there is muc hæmorrhage, irrigation is stopped for 24 hours (2) Infection of the skin: the dressing is remove and fomentations applied round the catheter until th inflammation has subsided

Advantages and disadvantages—The signal of succes is a rapid and maintained drop in temperature an respirations Unless explained by acute processe in the lungs or elsewhere every rise of temperatur or of the respiratory rat demands the most careful investigation. Free and complete drainage must be maintained.

The advantages of this method scarcely require enumeration The insertion of the catheter is a minor procedure which causes little disturbance to the patient and can be carried out in patients who are acutely ill. Frequent and painful dressings are avoided The disadvantages which have brought the method into some disfavour have mainly resulted from the use of an apparatus which is incompletely

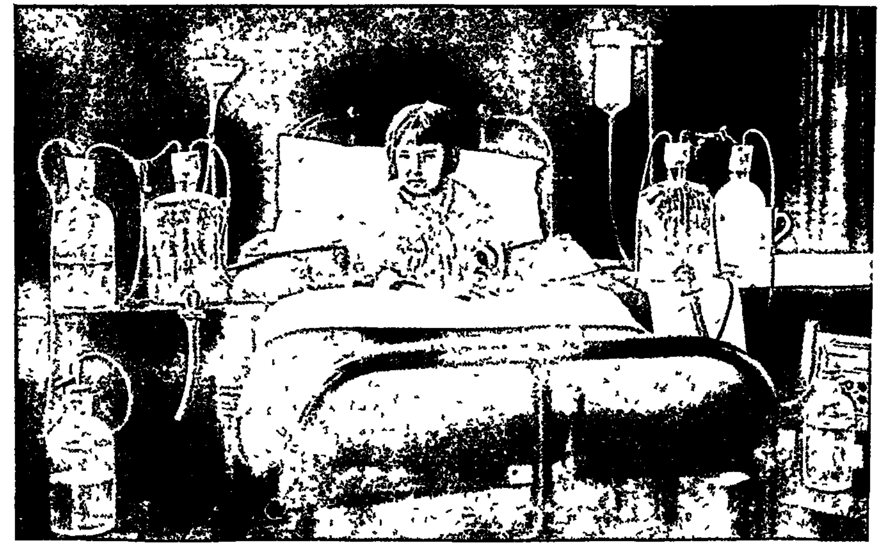

FIG. 3.—Bilateral continuous suction drainage in progress

airtight The most careful nursing is essential. By following the technique described, the apparatus has been proved entirely trustworthy and the course of the illness remarkably uneventful in the cases treated at the Children's Hospital by this method The following is an illustration

CASE REPORT

The patient, a girl aged 8 years, was admitted to the hospital on Feb 22nd The parents informed us that she had always been "chesty" but for the past five weeks had been ill with pneumonia The child was pale and poorly, with rapid and embarrassed respirations Her temperature was 101° and she showed evidence of an acute toxæmia

Physical examination revealed signs of a considerable effusion of fluid into the left pleural sac, with some displacement of the heart to the right Resonance was impaired at the right base and there were numerous bronchitis signs over the right lung Aspiration of the left pleural sac showed thick pus in which pneumococci were found

On the evening of admission a catheter was inserted into the left pleural sac and continuous suction drainage commenced The temperature soon fell and the patient remained practically afebrile until ten days later when the evening temperature rose to 100° As drainage of the left pleural sac had proceeded satisfactorily and the dullness at the right base had increased, the right pleural cavity was explored and pus aspirated, which contained pneumococci. On the morning of March 4th a second catheter was inserted into the right pleural cavity and suction drainage of the right side commenced The patient speedily became afebrile and her condition improved rapidly The photograph (Fig 3) shows the apparatus in action. On March 10th, seventeen days after its insertion, the catheter was removed from the left pleural cavity, drainage on this side having become negligible Three days later the wound became closed with a healthy scab On March 14th eleven days after its insertion, the catheter was moved from the right pleural cavity and four days later wound became closed with a healthy scab On arch 15th, three weeks after admission, the patient was lowed up and next day was permitted to walk a few steps During the afebrile stages of the disease, lung expansion as encouraged by the use of blow bottles As the ppetite improved she was given a high protein diet, pplemented with cod liver oil A radiogram taken on arch 12th showed no evidence of fluid in either pleural sac After three and a half weeks in hospital, though still in, the patient was in remarkably good general condition, d a ravenous appetite, and showed no physical signs part from some evidence of bronchitis over the left lower be This appeared to be chronic and the cure was nsidered to be complete

Reference to the clinical chart (Fig 4) indicates the degree of efficiency of the drainage

I am indebted to Dr C P Lapage for his kind permission to publish the above case, to Mr J D McEachern for the main principles of the technique, to Mr D'Arcy McCrea for a practical introduction to his method, to Mr Teesdale for his excellent photograph and to the nursing staff, to whom much of the success of the treatment in the case was due

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"LOCKING CHILDREN IN"—Under this title the [illegible] of the National Society for the Prevention of Cruelty to Children draws attention to "the increasing practice of leaving children locked up in the house [illegible]" Apart from actual fatalities resulting from this practice there are, he points out, serious mental and physiological risks attached to it In all cases reported to them the Society's inspectors have been able to show [illegible] with goodwill and management these risks can be avoided

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THE PERIODICITY OF MICROFILARIA BANCROFTI

By Clayton Lane, M D Lond
LIEUT-COLONEL, I.M.S (RETD)

Dr G Carmichael Low and Dr P H Manson-Bahr have reported (1934) the careful, accurate, and devoted observations of A H Walters carried out in London on a filarial lascar, by means of two hourly counts of the numbers of *Microfilaria bancrofti* present in the same quantities of his peripheral blood After comments they reach the following conclusions "For the moment we, just as Manson did some 50 years ago, believe that filarial periodicity is best explained by parturition going on more or less continuously, the young being, as Manson put it, nearly constantly carried along the lymphatics and thoracic duct to the blood, while the excess that would in time take place is checked and kept more or less constant by a mortality amongst the older and effete embryos" Against this view, here restated, I have already (1929) brought forward facts and considerations which best explain this periodicity by a simultaneous timing of the cycle of parturition of all live female worms, so that broods of embryos are simultaneously poured into the blood, and rapidly removed therefrom and destroyed Most of the points in that line of argument have been accorded no comment by these writers, yet I will extend to them the courtesy of a detailed consideration of the views expressed in their last paper

In the arguments they use, assumption has an undue place, and it is in the interest of tropical medicine that this should be made clear For if large numbers of microfilariæ are destroyed daily, the organ or tissue which does this is being subjected to continuous overwork, with loss of that potential reserve on which the body should be able to fall back in times of stress, and there is the likelihood, or certainty, that it will eventually suffer permanent structural change In other words the matter is not one of mere academic interest, but affects the daily lives of hundreds of thousands of people

Having found that, judging by blood samples of the same size taken every two hours, night and day, the total number of microfilariæ was much the same over 24 hours whether periodicity was of normal distribution or had been disturbed by altering the sleeping hours of the host, these writers conclude with emphasising italics that this finding points strongly to daily migration and reappearance of the same undamaged embryos rather than to the regular death and exact numerical parturition of embryos by the adult female worm or worms But one knows on the one hand by the 17 year old work of Warrington Yorke and B Blacklock (1917) that a microfilarial total of this sort need not be so exact, as is here reported, when microfilarial periodicity is changed by mere altering of the hours of sleep and on the other hand that when a hookworm or trichostrongylus case is followed day by day, the number of eggs in the fæces has a like rough equality With the last worms the rough constancy is manifestly due to parturition accordingly the emphatic assumption that the opposite is the case in filarials has but a weak foundation The writers make a return to the subject in these words "This [constancy], we held, indicates a more or less constant stream of embryos emerging from the uteri of the adult worms daily with a corresponding destruction constantly going on, either wise how account for the constant figure" An average daily constancy of microfilarial numbers must depend on a balance, more or less exact, between production and destruction of embryos, however this is produced. In itself it gives no indication at all as to how that balance is maintained, nor can it rightly be used to support one theory of its causation rather than another. Apparently the reason for the assumption just noted lies in another made in the following sentence. "It seems most unlikely that female *F bancrofti* should give an even yield of embryos when subjected to adverse circumstances" By this last term there is meant, as the context shows, the change in sleeping hours of the host induced while he remained in London But what evidence is there that this change constitutes an adverse circumstance? In spite of the early gibe at Sir Patrick Manson which inquired whether the periodic filariæ which he described kept watches, these creatures are timekeepers, and the time they keep is local time Whatever the longitude, they are, in persons living ordinary lives, found in greatest numbers in the peripheral blood about midnight. The man whose case is now being considered came from Calcutta, where the embryos must have swarmed as usual about midnight local time When he came to the Greenwich meridian and the embryos swarmed, as they did about midnight local—that is Greenwich—time, their hour of swarming had in fact been shifted half-way round the clock by Greenwich time since their host left Calcutta, and yet they gave a typical periodicity chart. Similarly in Warrington Yorke and Blacklock's case cited above, the embryos had during his voyage from Australia undergone a shift right round the clock by Greenwich time, and yet they too gave a typical periodicity chart What justification is there for assuming that in the lascar a further alteration in sleeping hours, induced without altering his longitude, constituted an adverse circumstance? The making of such an assumption can hardly be held to point strongly to the causation of periodicity as lying in one direction rather than in another.

There is next described the transference into the heart of a guinea-pig of great numbers of microfilariæ, their immediate disappearance from the blood, and a failure to find them in all the organs which were subsequently examined; and the question is asked, "What is it that determines the sudden death and disintegration of the embryo in incompatible blood in the guinea-pig?" There are two assumptions here. There is no evidence that there was sudden death and destruction of the worms; there was immediate disappearance, but its reason remains in doubt. It is assumption to state, before seeking evidence, that the blood of the guinea-pig is incompatible with the survival in it of *Mf. bancrofti* and so is the cause of sudden disappearance of the latter, for that seems to be the meaning of the sentence. Such a confident statement should have been withheld till the matter had been tested. In this connexion the writers should, for completeness of evidence and with a view to displaying all aspects of the problem, have mentioned the work of F. Murgatroyd (1933) of the Liverpool School of Tropical Medicine, who injected *Mf bancrofti* from man into the veins of man and experienced exactly the same dramatic disappearance as is here noted for the guinea-pig Since specific incompatibility of blood is manifestly not the cause of this disappearance in the one case it would here too have been more fitting to withhold a confident expression of opinion that it held for the other until these members of the staff of the London School of Hygiene and Tropical Medicine had verifie or confuted Murgatroyd's experiment.

POST-MORTEM FLOW OF BLOOD AND LYMPH

Next is cited Manson's classical filarial case i which, after death from prussic acid, the blood heart, great vessels, and lungs was found swarmin with microfilariæ. In commenting on it, the co viction of Low and Manson-Bahr is that the embry would at once have been immobilised by this poiso and then this sentence follows. "Even if th embryos had escaped in these poisoning cases remain alive in cases dying of ordinary causes, ho could embryos enclosed in a sheath find their wa from the periphery, from the legs and arms, into th large vessels of the thorax and lungs after the circula tion has stopped and the blood and lymph are n longer flowing." It must not be concluded from th wording of this sentence that the embryos whic Manson found in his case came from the arms an legs In his original report on it, which is not retaine in Dr. Manson-Bahr's last edition of Manson "Tropical Medicine," is found the description of huge lymphatic varix occupying the pelvis and bac part of the abdominal cavity and containing man adult filariæ Similarly in the case now reporte small X ray shadows suggested calcified filariæ i the abdomen, and the work of O'Connor et al (193 has shown that where calcified filariæ have been foun there living ones also must be expected Havin excluded the possibility of misunderstanding her the way is clear to discuss the matters indicated i the heading

The post-mortem flow of blood—The writers quot an experiment by Manson in which he foun enormous numbers of embryos of *Dirofilari immitis* in the heart's blood of a dog after i death from prussic acid, the assumption bein that the findings after death show the stat of things in the circulation at death Füllebor (1908, 1929) reported a similar finding after the deat of a dog with this infection, but he had controlle his experiment in a manner in which Manson did no He had punctured the heart during life and foun about the same numbers of microfilariæ in its bloo as were present in cutaneous blood, yet the le ventricle after death contained them in enormou numbers. The conclusion of this experienced helmin thologist, a conclusion which seems unshakabl was that the embryos had obviously reached th ventricle from the lungs after death If it is reason able to conclude that they did so in Fülleborn's dog it is unreasonable to insist that they cannot have don so in Manson's man. As the result of this controlle experiment Fülleborn pointed out that microfilaria numbers in different parts of the circulatory syste alter greatly after death, their numbers after deat are not necessarily evidential of their numbers durin life But if microfilariæ can so pass after death fro lungs to left ventricle, it is inadmissible to insist tha they cannot equally pass after death from the righ ventricle, where the adult worms of this specie normally live, to the lungs. That is to say, th finding of large numbers of them in the lungs afte death is not valid evidence that they were necessaril there during life The whole is presumptive evidenc of a post-mortem drift of blood away from th arteries where blood pressure was presumably stil somewhat the highest at the time of death Ther is, of course, other presumptive evidence for a post- mortem flow of blood, but the extent of such flow seems never to have been measured in the way in which the post-mortem flow of lymph has been

The post mortem flow of lymph—The assumption that lymph ceases to flow through the thoracic duct after death from cyanide poisoning has been proved to be incorrect Acceptance of this assumption was implicit in my suggestion (1929) that female worms may well empty their uteri in a living host, the implication being that lymph still flowing till death would carry the embryos to the spots where Manson found them after death But subsequently, the kindness of Prof F W O'Connor of Columbia University, New York placed in my hands a monograph (1933) by Prof Cecil K Drinker and Miss Madeleine Field, Ph D, of Harvard University, Boston As they note (p 110), F A Bainbridge (1906) reported that thoracic duct lymph flowed freely after death if dogs had been made plethoric with intravenous injections of dextrose, or of saline or peptone solutions just before they were killed Now Manson's views on the mechanism of microfilarial periodicity were openly and fundamentally based on the assumption that the findings in his classical case showed the condition of things as they had been at the time of the man's death, and no one, myself included, seems ever to have questioned that assumption But on becoming cognisant of this 28 year old observation I felt that cyanide poisoning might also be a producer of a marked flow of lymph after death, while it was clear that if this were so Manson's conclusions were unsound Accordingly I wrote to Dr Drinker over a year ago and asked him if he could tell me whether after cyanide poisoning such a flow occurs He has most courteously investigated the point in two of his accurately measured experiments on dogs, has sent me the protocols by the hand of his colleague Dr Field, and has given me his very generous permission to use them

> Under nembutal anesthesia the thoracic duct of each dog was cannulated and the lymph flow measured There was then injected into the jugular vein 1 c cm per kg of a 1 per cent solution of potassium cyanide, the breathing stopped after 30 and 60 seconds and the heart after 180 and 90 seconds but the lymph continued to flow for 27½ minutes and 33 minutes respectively As to its quantity, in one dog the flow of lymph during the first 7 minutes and 40 seconds after the heart stopped was half as much as it had been for 20 minutes before the cyanide injection, while in the second the amount of lymph flow measured during the 20 minutes before the injection and the 20 minutes after the heart stopped beating were practically identical, and in its case the total quantity of lymph flow after death was 5 9 c cm, the dog weighing 15 kg—which quantity corresponds to about 21 c cm in a man of 75 kg

The belief then that after death from cyanide poisoning the lymph ceases to flow is incorrect In these experiments it has continued for a considerable time and has actually been increased in quantity at first As Prof Drinker himself puts it to me "I was greatly surprised, and so was Miss Field at the length of time the lymph flowed after death and also with the vigor with which the flow continued" Nor is there justification for concluding that these two experiments display the limits of the flow in duration or quantity As has been noted, the belief that it ceased at death was the foundation on which Manson built his conclusions and since his premises, [illegible] in the paper under consideration, have been shown to be false his conclusions become invalid Yet I think that further inferences on Manson's case must be drawn from these facts newly disclosed by Drinker Since it must reasonably be concluded that [illegible] a considerable quantity of lymph entered the great vessels and heart after death and since that acute observer made no mention of its presence as such at these sites, it must have become intimately mixed with blood and, if laden with microfilariæ, have carried them just where he found them Further, it seems reasonable to deduce that in such a case the post mortem flow of lymph is greater than it is in an ordinary one of cyanide poisoning, for the force which causes lymphatic vessels to become dilated and varicose is a rise in the pressure of the lymph within them to a point at which it becomes greater than their walls can withstand, their very condition is evidence of increased and persistent lymphatic pressure When in such a case the pressure in the great veins has fallen after death to its final zero, the increased tension of the lymphatic walls will presumably cause an increased quantity of lymph to flow from a greatly enlarged reservoir into the veins I think that this conclusion is difficult to avoid but whether admitted or not, it does not detract from the observed fact that at least in cyanide poisoning the lymph flow after death is considerable and singularly persistent, and that inferences drawn on the assumption that it ceases on death are invalid and untenable

To sum up, there is then direct evidence that at least after cyanide poisoning the post mortem flow of lymph is vigorous and enduring, and indirect evidence that there occurs a post mortem drift of blood, and it is clear that the effect of both will carry microfilariæ just where Manson found them in his classical experiment Accordingly his findings are not evidence that at the moment of his patient's death these embryos were in the spots where Manson discovered them some hours later His report does not disclose a microfilarial daytime haunt, as he thought it did

A MICROFILARIAL BISCUIT

Next after considering my conviction that it is as physically unthinkable that microscopic microfilariæ should hold their own in the current of the heart and great vessels as that a man should do so by swimming while half way down the Niagara Falls, the writers conclude "Why embryos should be able to hold their own against the currents of blood in the heart and large vessels is not clear, but it is a fact that they do" Apparently the justification for this confident assumption lies in an observation quoted from Manson's diary that filarial embryos in a Chinese bird "are provided with an oval spicule and surrounding papillæ by means of which they are able to adhere to the blood vessel walls and it is probable that the human embryo filariæ do the same thing It is a common observation that embryo *F bancrofti* are able to adhere to a coverslip and to clumps of red corpuscles by this means and no other use has been suggested for this particular organ save as a means of anchoring the embryo to the capillary wall" The meaning is obscure, but apparently is that *Mf bancrofti* too has a spicule surrounded by papillæ by which it adheres to a coverslip or to clumps of corpuscles (strands of fibrin are neither suggested nor excluded as a possible anchor) and that this acts as a holdfast even through the intact sheath In the many years since Sir Patrick made his observation great strides have been made in microscopic technique and staining and the inquirer will find no such organ described and pictured for example by F Fülleborn (1929) or [illegible] (1933) in *Mf bancrofti* nor will he find it easy to conjecture how any such holdfast, did it exist, could act effectively through the intact sheath as apparently it is supposed to do At any rate the writers have [illegible] themselves to the possibility of anchorage to a capillary wall, and do not make it obvious what connexion they see between this and the maintenance by these microscopic creatures of their position in the midst of the churning current of the heart and great vessels, while continuously battered with corpuscles as wide as themselves That microfilariæ do so maintain themselves is not a fact, it is an assumption whose meagre weight has been made clear by the facts and inductions set out above, and their distribution is actually that which would be expected were they carried to these positions by lymph and blood flow after death.

ANALOGIES WITH DIROFILARIA

Immediately following the sentence claiming the existence of this "fact" comes the following: "The same is true for the adult *Dirofilaria immitis* of the dog which live in the right ventricle of the heart, and which must have taken up their position there, so far as we know, on entering the definitive host after quitting their intermediary, the mosquito" In so far as this sentence may refer to adult worms, Mr. H. A Baylis, D Sc, of the British Museum (Natural *History), to whom I put the matter, has* pointed out a sentence in Fleming's translation of Neumann's book describing how these worms wind themselves almost inextricably round the columnæ carneæ. In other words, they are firmly anchored to the heart wall in a manner which has no analogy with microscopic *Mf. bancrofti* in the conditions which have just been considered. So far as the sentence may refer to the infective larvæ of *D. immitis* as they come from the mosquito it covers another assumption, in the suggestion that they presumably take up and maintain that position as larvæ.

E H. Hinman et al (1934) made a mutual exchange of a third of the blood of two dogs, one infected with *D immitis*, the other clean. Of the microfilariæ injected into the clean dog 92 per cent. disappeared at once, the rest persisting for five or six weeks In the donor their numbers fell to about a third and did not return to normal *at the end of 24 hours This it was held they should* have done, if such periodicity as exists in this worm were due to cyclical parturition of the female with daily destruction of the embryos In this connexion it is well known that the hookworm which lives on, even though it does not live in, blood has its egg-laying markedly affected by the state of health of the host, and in this case the assumption is that these huge transfusions of blood left hosts and blood-living parasites quite unaffected It is noteworthy that the number of microfilariæ in the donor's blood five weeks after the blood-letting were twice as many as they had been before it. The conclusion drawn was that in this worm periodicity cannot be due to cyclical parturition and daily destruction of the cyclical brood Doubtless other experiments will be carried to their logical end. But in transferring inferences from *D immitis* to *Wuchereria bancrofti*, inadequate weight is being given to the great difference in exactness of the periodicity, to the marked difference of normal habitat which must affect at least the timing of periodicity if due to parturition, and to reports, right or wrong, of other habitats than the heart for *D immitis*.

THE HEART OF THE MATTER

The naked problem as it now stands is thus modestly shrouded by Low and Manson-Bahr "There are many other points that one could criticise in the deductions Clayton Lane has drawn from the study of Prof F. W O'Connor's sections The fact that adult filariæ are found all with their uteri empty in blocked and therefore pathological lymphatics does not necessarily mean that this is what takes place when the parasites are inhabiting normal lymphatics" But first three points must be made. Has anyone ever seen live* *W. bancrofti* in really blocked lymphatics? Are lymphatics inhabited by adult live worms ever really normal? Lastly my inductions were not drawn from O'Connor's sections, a statement which makes apposite a brief historical note

Over five years ago (Lane, 1929) I concluded, after setting out the then available evidence, that periodicity in this infection must be the result of simultaneous parturition by female worms, thus agreeing with the conclusions formed by W. W. Myers 48 years earlier and at once opposed by Manson It occurred to O'Connor that here was a matter capable of far more direct proof than had hitherto been attempted; that it should be possible to determine by adequate examination whether all live female worms in the same body or tissue were in fact at the same stage of embryonic development, and whether parturition really took place simultaneously at a fixed hour, and it was not till his examinations became fruitful that he wrote of them to me. The conception and details of the investigation and the appraisement of its results were O'Connor's alone; they were instituted and carried to a point where results appeared without my instigation or knowledge. They were entirely independent, and the credit for them belongs to O'Connor alone Since 1931 I have had many letters from him telling me of the results obtained in further examinations made by himself and his staff on yet more cases of periodic filariasis by means of many thousands of serial sections of lymphatic glands, testicles, and other organs; and I have had the privilege of examining a few hundreds of his slides.

The heart of the matter is this. O'Connor's minute examinations cover a series of cases, and every one of them has shown the same thing. Provided they were alive when excised or when the host died, all female worms from the same source are at the same stage of pregnancy in whatever kind of lymph vessel they lie; and the cycle of pregnancy is so timed, at least in relatively healthy persons, that the birth of microfilariæ takes place about midday. Moreover, as should be well known, he, with C R. Hulse, checked his results (1932) by correctly foretelling exactly the stage of pregnancy which would be found in females removed with lymph glands excised at a particular hour of local time. In explanation I see only three alternatives (1) O'Connor has failed to tell the truth, specimens which have been sent to me have been selected ones with the hour of removal or death falsified, and his false story of correct foretelling has been connived at by his distinguished surgical colleagues at Columbia University, Presbyterian Hospital, New York. Prof. O'Connor's friends on either side of the Atlantic would rightly and emphatically resent any such gratuitous suggestion of fraud. (2) O'Connor has been the victim of such an extraordinary series of coincidences as must rarely have beset any investigator; to settle this matter it is merely necessary *to add* sufficiently to the number of cases investigated. (3) The cycle of embryonic development in females of *W. bancrofti* which show periodicity is really timed simultaneously.

O'Connor's naked claim, when no longer decently shrouded as in the sentence quoted above, is that he has in fact demonstrated precisely that anatomical condition which must be present in female worms if microfilarial periodicity is produced by their simultaneous parturition His slides constitute an emphatic refutation of the suggestion that there is more or less continuous parturition by each individual female worm, which is presumably what Low and Manson-Bahr mean by the expression used in their conclusion, quoted at the beginning of *this paper* O'Connor's preparations show that uteri and vagina

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* i e, Alive when the host died or had the tissues in question cut out of him.

f each female worm gradually fill up with unsegmented ova, segmented ova, embryos coiled in the membranous shell, and sheaves of extended microfilariæ, development steadily advancing as one passes forward towards the vulva Then, when the genital tubes have filled, there occurs a massive expulsion of the vaginal and uterine contents so that even ova (perhaps only unimpregnated ones which have been swept forward with their developing fellows) are extruded. The worm is left collapsed, wrinkled, and nearly emptied, while in the sinuses of the lymph glands concerned are found microfilariæ and coiled embryos (some of which stages their poorly staining nuclei show to be in process of dissolution) as well as the seemingly unfertile ova But if the meaning of the expression, as to more or less continuous parturition, is intended to apply to something in the nature of the running of a relay race arranged among the female worms, then the conclusions cannot be maintained, for in periodic filariasis caused by this worm all living females in the same body or excised tissue are observed to be at the same stage of pregnancy or post parturition, in whatever type of vessel they lie O'Connor, it may be repeated, has in fact reported the finding of precisely that anatomical condition which must underlie a microfilarial periodicity due to simultaneous parturition I showed slides of his, exhibiting all these conditions, at a meeting of the Royal Society of Tropical Medicine and Hygiene held in November, 1933 The contrast between the turgid females distended with progeny removed at noon and the collapsed, wrinkled, emptied females removed at 2 P M is a notable one

Obviously the confirmation of the presence of these timed and simultaneous anatomical changes, reported as constantly underlying this periodic filariasis in persons leading normal lives, is a matter of direct examination, and it is particularly capable of being furthered by those who hold teaching offices as do Dr Low and Dr Manson-Bahr For now, as in the past, there must pass yearly through the London School of Hygiene and Tropical Medicine enthusiastic students, through whose good offices there could be examined lymph glands or *testes* excised at stated hours of local time or removed *from* bodies where the hour of death was known The School of Liverpool has in effect a branch in the tropics, and that of Calcutta is even more happily situated Like everyone else's, O'Connor's work must be independently repeated before it will be generally accepted, and if this is not done in British schools it will be done elsewhere This is the heart of the matter and the point which first needs attention, to approach the problem otherwise is to put the cart before the horse My own examinations of O'Connor's slides has left me satisfied as to the accuracy of his observations—namely, that, when the hosts are living normally timed lives, there occur in this periodic filariasis two parallel *cycles each of* 24 hours' duration (the first a cycle of intra uterine development ending with parturition normally about midday, the second the well known one of the swarming of microfilariæ in the blood with its apex about midnight) and that it is merely unreason which after independent confirmation will refuse to connect them as cause and effect After direct observation has independently confirmed the existence of a cycle of parturition in infection with periodic W *bancrofti*, it will then be logically fitting to take up an adequate and intensive investigation as to the site of that daily destruction of embryos which must accompany a periodicity due to timed parturition At present it need only be repeated that as demonstrated by O'Connor's slides which I showed at the meeting mentioned, microfilariæ which reach lymph glands, evidently by the lymph stream, are seen in them in process of dissolution, and there seems no reason against the same fate being undergone by those which reach them through the blood

CONCLUSIONS

It is held to have been shown above that much that is being put forward as knowledge of infection with periodic *Wuchereria bancrofti* in man is assumption The central assumption is that in cyanide poisoning the flow of lymph ceases on death, whereas Prof. Drinker, of Harvard University, has found that the post-mortem flow in this condition is considerable in duration and quantity It was essentially on a death from hydrocyanic poisoning that Sir Patrick Manson based his hypothesis that, *in the* periodic form of this filariasis, *microfilariæ* hide themselves by day in just those positions to which a post-mortem flow of lymph would carry them His hypothesis is left foundationless On the other hand Prof O'Connor, of Columbia University, reports that he has in fact demonstrated precisely that anatomical condition which must be found in female worms if periodicity is produced by their simultaneous parturition; and typical appearances of the worms at essential stages have been shown in London As always in such cases his work must be repeated by others, but in the meantime theoretical objections by those who neglect *to further* this study cannot indefinitely be taken seriously Analogies with *Dirofilaria immitis* are inexact and must not be given undue weight The proper material for the study of this periodic filariasis of man is man with this periodic filariasis

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AGRANULOCYTIC ANGINA

FOUR CASES TREATED WITH PENTNUCLEOTIDE

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F J Smith[1] recently enumerated ten cases of agranulocytic angina published in this country, and at the same time recorded one of his own which recovered In the same number of THE LANCET J H Fisher[2] recorded two cases which ended fatally The condition in all probability is much more common in this country than these figures would suggest, for I have myself met with four cases within ten months of each other and I know of two others in this neighbourhood in 1934 both treated with pentnucleotide and both ending fatally All my cases occurred in private practice and all conform to Jackson's[3] essentials in the almost complete absence of polymorphonuclear cells and in the red cells being normal or nearly normal; but in none of them were the platelets counted.

Case 1—A farmer, aged 47, was seen in consultation with Dr. C W Chaplin of Angmering on Feb 3rd, 1934 He gave a history of having felt out of sorts for an indefinite time, certainly, he said, for months On Jan. 25th, at a sale, he was told by a friend that he looked ill and ought to see a doctor He was seen on Jan. 30th by Dr Chaplin, who found him in high fever and sent him into a nursing-home, suspecting *Brucella abortus* Agglutination tests by Dr C J Harwood Little all were negative, but the latter took the opportunity to examine the blood further and his report on Jan. 31st was "red blood-cells, 5,530,000 per c.mm ; hæmoglobin, 98 per cent., colour-index, 0 89 No irregularities of size, shape, or staining of red cells No nucleated red cells seen There appears to be no deficiency of platelets White cells, 860 per c mm ; polymorphs 7 per cent , lymphocytes 76 per cent , monocytes 17 per cent An occasional plasma cell was seen "

He had a swinging temperature, 98 8° and 103° F having been the extremes, pulse-rate and respirations having varied with the temperature from 98 to 120 and 16 to 28 respectively. Of abnormal physical signs there were none, and he had no buccal or pharyngeal lesions Bowels were inclined to be loose. Blood pressure was 112/74 That day he was started on 1 c cm doses of 5 per cent sodium nucleinate solution, but there was delay in obtaining a supply of pentnucleotide which was substituted on Feb 9th and administered intramuscularly in 10 c cm doses twice daily afterwards On Feb. 8th Dr Harwood Little reported. "total white cells, 100 per c mm ; polymorphs 15 per cent, lymphocytes 69 per cent., monocytes 16 per cent No abnormal leucocytes were seen. There is now some polychromasia of the red cells " The Wassermann reaction was strongly positive

I saw him again on Feb 10th His general condition had deteriorated and he was now delirious at times Blood pressure was 106/74 There were great irregularities in the temperature chart which was that of septicæmia or generalised tuberculosis, swinging from 98° to 103 6° F Pulse- and respiration-rates were rising, especially the latter, but, as before, examination was negative, there was no enlargement of the spleen or lymphatic glands, nor any localised inflammation or necrosis The diarrhœa continued He went steadily downhill, the pyrexia became higher and more maintained, the maximum reading being 104 4° and he died on Feb 15th During the first nine days in the nursing-home he had been given two tablets of Allonal nightly containing amidopyrin grs 3½ in each dose

Case 2—Mrs A, aged 51, was seen on March 2nd, 1934, in consultation with Dr E Wight She gave no history of any previous illness or ill-health On Feb 23rd she had driven her husband from Byfleet to Brighton and had felt chilled on and after arrival Next day she felt better and went out On the 25th she felt ill again, was aching all over and thought she had influenza Next morning her husband bought a thermometer and, finding that her temperature was up, sent for Dr. Wight, who had been seeing her daily since Her temperature had varied between 101° to 104° F The urine contained a trace of albumin and 3 per cent of sugar, but there was no ketosis A catheter specimen showed no pus cells and was sterile on culture Examination of chest and abdomen revealed nothing abnormal Her heart's action was rapid for an infection by the typhoid group, and with the last case fresh in my mind I advised agglutination tests and a blood count We also inquired as to any localised painful sites or sores but she said she had none There did appear to us to be general hyperæmia of the gums and throat, but all she complained of when questioned was dryness

Dr L R Janes saw her the same day All agglutination tests were negative On the blood he reported "hæmoglobin, 79 per cent , red cells, 4,125,000, and white cells, 1200 per c mm , colour-index, 0 96 Differential count polymorphs 8 per cent, lymphocytes 80 per cent, monocytes 12 per cent The red cells normal in shape, size, and staining reactions " On the following day, March 3rd, she was moved to a nursing-home and until March 8th she received 10 c cm pentnucleotide intramuscularly twice daily On March 9th, 10th, 11th she had one injection daily and its administration was then stopped She developed an acute vaginal abscess, of the early discomfort from which she had kept silent A sinus gave trouble for a time but healing was complete when she was discharged on March 25th apparently quite well

On March 7th Dr Janes reported. "white cells, 12,200, polymorphs 72 per cent, lymphocytes 23 per cent, monocytes 5 per cent " And on March 10th "white cells, 15,150; polymorphs 79 per cent, lymphocytes 15 per cent, monocytes 6 per cent " At this stage it appeared questionable whether the case was one of true agranulocytosis or was not rather an example of temporary neutropenia at the onset of an acute infection The statutory interval had been left between the blood counts, but the response to pentnucleotide seemed altogether too dramatic

Dr L G Higgins of Woking kindly informed me that after her return home she developed pelvic peritonitis high up in the left broad ligament and also a rather severe left pyelitis The pain and pelvic cellulitis lasted three weeks and the pyuria two months On May 6th a blood count showed red cells, 4,700,000 per c mm , Hb, 80 per cent , C I, 0 85, white cells, 5800, polymorphs 64 per cent, lymphocytes 15 per cent, monocytes 17 per cent, eosinophils 3 per cent, and basophils 1 per cent. During the early summer the patient appeared to be in good health, and in July she went away to stay with friends. She returned home on July 18th saying she had been feeling out of sorts for a day or two. Her temperature was 102°, she had a tender inflamed pile, and there was pus in the urine again The blood count showed red cells, 3,600,000, white cells, 400, Hb, 75 per cent ; C I, 1 0. All the white cells were lymphocytes On July 19th she was given two doses of pentnucleotide 10 c cm each The following day she was much worse, her mouth was ulcerated, and she had a sloughing vaginitis, temperature 103°, heart's action rapid and feeble On that day she was given 40 c cm pentnucleotide. On July 21st her condition had still further deteriorated In the morning she had 20 c cm pentnucleotide She died suddenly at midday

Case 3—Mrs B, aged 29, was seen on April 20th, 1934, with Dr Victor G Williams of Eastbourne, to whom I am indebted for particulars of her history and the earlier facts of her illness For eight years she had been subject to febrile attacks with sore-throat and swollen tender gums In 1930 she was operated on for acute cholecystitis and at the same time a chronically inflamed adherent appendix was removed She subsequently had a course of mixed streptococcus vaccine from organisms found in a tooth and in the fæces A blood count that year showed red cells, 4,750,000, white cells, 5000, polymorphs 51 per cent, lymphocytes 49 per cent In 1933 she had been in good health until the autumn, when she had the last of her earlier febrile attacks and, after further dental extractions in December, she had from January to March, 1934, another course of *Streptococcus viridans* autogenous vaccine which produced no reactions

The present illness began suddenly at 2 A M on March 30th with a rigor, vomiting, and general aching When seen her temperature was 101 5°, she was sweating profusely, but objective examination revealed no more than redness of the fauces and swelling of the nasal mucosa On March 31st she had a second rigor On April 3rd Dr J. Bodkin Adams saw her with Dr Williams and found no abnormal physical signs except that by that time she had a boil of the external auditory meatus Fever persisted up to 103 2° and on April 11th the nose and nasal sinuses were examined by Mr D E O'Connor Cuffey with negative results On April 9th she was given an injection of Omnadin and on April 10th and again on the following day she was given 15 c cm antiscarlatina serum intramuscularly without any effect upon the pyrexia which was now of pneumonic type On April 12th Dr A G Shera reported that the white blood-cells numbered 1600 per c mm , and of these 16 per cent were polymorphs, the remainder being lymphocytes He also found hæmolytic streptococci in culture made from a throat swab That evening her temperature rose to 104 4° and she had another rigor On April 13th 2 c cm injections of nuclein were started and a sensitised vaccine from the throat streptococci, the initial dose being 100 millions, On April 16th Dr Shera reported white cells down to 800 lymphocytes 99 per cent, basophils 1 per cent, no polymorphs were seen That day she had her first injection of pentnucleotide 10 c cm, and these were continued twice daily onwards By now the patient was delirious at times, lumbar puncture was performed but examination of the cerebro-spinal fluid yielded nothing of interest and there was no improvement in her symptoms A catheter specimen of urine was sterile The throat remained much the same but phlegmonous ulcers formed on the gums, there was severe glossitis, the face swelled, and she developed minute pustules on the skin The sensitised vaccine which had been pushed up to 2000 million doses was discontinued after April 19th

I saw her with Dr Williams the following morning. She was then a pitiable sight All along the gums were sloughs, and her lips were swollen and scabbed She could hardly open her mouth and there was great fœtor of the breath. The right eye was closed by hæmorrhagic œdema of the upper lid There were discrete pustules and punctate petechiæ dotted over the body, and a profuse morbilliform rash over the left upper limb Blood pressure was 98/66, hæmoglobin 45 per cent The heart was beating rapidly and feebly but there were no murmurs or pericardial friction, and the chest was clear except for a few crepitations at the right base There was no enlargement of the spleen In two blood films I made Dr Janes could not find a single polymorphonuclear leucocyte.

On April 21st she had a blood transfusion of 500 c cm Dr Shera reported on that day "red cells 2,800,000 Hb, 40 per cent, white cells, 1000 per c mm, all of them being lymphocytes" She died on April 22nd, the twenty fourth day of her illness

CASE 4 —Miss C, aged 25, had never been robust but had not suffered from any serious illness Following trouble from an impacted wisdom tooth she had had a series of sore throats, and on May 24th, 1934 her tonsils were enucleated by Mr D A Crow, after which she had a normal convalescence and no return of the sore throats On Oct 29th she developed an ulcer on the tongue after general aching pains the day before These pains continued, and on the 31st, finding that her temperature was 101°, she called in Dr C C Elliott of Seaford From that time onwards she was kept in bed The lingual ulcer quickly healed, but she developed another on the hard palate which was touched with solid silver nitrate The aching and fever continued, temperature varying between 99 4° and 101°, she complained of pain on swallowing anything hot, from time to time the glands in the neck were swollen and tender, and on Nov 5th she developed a third ulcer, this time on the lower lip The following day Dr Janes saw her at her home and reported as follows hæmoglobin 71 per cent red cells 3,510,000 per c mm, C I, 1 0[illegible] leucocytes 1000 Differential count polymorphs 2 per cent (20 per c mm), lymphocytes 92 per cent (920 per c mm) monocytes 6 per cent (60 per c mm) In the stained films the red cells are practically normal in shape size, and staining reactions

Dr Elliott then had her moved to a nursing-home in Hove, and that evening Nov 6th I saw her and she had her first dose of 10 c cm pentnucleotide *On admission* temperature was 107°, P 104 R 22 She had an active ulcer on the lower lip, there was blackening from the silver nitrate at the site of the ulcer on the hard palate but no inflammation around and the lingual ulcer had healed and its site was unidentifiable There appeared to be some swelling of the gums but they were not painful and there had been no bleeding She complained of her throat hurting her when she swallowed but nothing abnormal was visible Her general condition was definitely good the history was short, the local lesions were slight and it seemed that hers was a case which on pentnucleotide was likely to do well Unfortunately it did not

The mouth gave no trouble and there was no difficulty about her nourishment, although all along she complained of some extent of sore throat without any objective evidence of the cause of such The palatal ulcer healed but that on the lip remained open but it did not spread and as the days went on she said it hurt her less No fresh ones developed the cervical glands went down and she completed what her nurses described as an ordinary normal period General aching was the prominent symptom On Nov 8th and 9th four consecutive temperature readings were 104 2°, 103 2°, 102°, and 99 4°, the pulse fell from 108 to 88, respirations from 24 to 20, and she said she felt "quite different" in herself, but the next three readings were 104 2°, 106°, and 106 2°, and for the next 24 hours the temperature was 105°-106° except when she was sponged

On Nov 10th Dr Janes reported on blood taken the previous day "red cells, 3,280,000 per c mm Hb, 68 per cent, C I, 1 04, white cells, 800 per c mm, lymphocytes 70 per cent, monocytes 30 per cent In the stained films the red cells are normal in shape, size, and staining reactions" That day the dose of pentnucleotide was increased to 30 c cm, and on Nov 11th she was given 40 c cm She lost flesh rapidly but the hyperpyrexia was accompanied by no delirium, she was able to take fluid nourishment in adequate amount, to wash out her mouth, and appeared in no way to realise the gravity of her condition On the 10th her respiratory rate touched 30 for the first time and I went over her chest again without finding anything abnormal During that night, however, she complained for the first time of pain in the right side and examination next morning revealed a wide area of pleuritic friction That day she had her third and last blood count from Dr Janes "red cells, 3,180,000, Hb, 65 per cent, C I, 0 87, white cells, 300, lymphocytes 55 per cent, monocytes 45 per cent" Blood grouping was also performed with the idea that next day as a last resort she should have a transfusion from a donor with an artificially produced leucocytosis But she died at 8 o'clock the following morning

Each of these cases presents points of interest

Case 1 was only diagnosed so early because the clinical pathologist went beyond the specific tests asked for At no time during the course of his illness had this patient's symptoms any anginal element Ordinary nuclein was employed at first, but he had six clear days' treatment by pentnucleotide before the day he died He is the only one of the series who had taken amidopyrin, and the agranulocytosis was well established the day after the first dose Its exhibition for a short time in small doses was merely an incident in his case, nor had I imagine, the positive Wassermann reaction any ætiological relation

In Case 2 the suggestion that agranulocytosis might be present was tentative and far fetched the pathologist's report on the day she was seen was a surprise and the improvement in her blood picture was so rapid and so startling as to suggest the vis medicatrix naturæ rather than a response to specific treatment Unfortunately events proved the contrary

Case 3 gives the typical picture Interesting features about her are the earlier attacks of sore throats and swollen gums and it is of particular interest that in her we know that four years previously she had both an absolute and a relative neutropenia There was a long history of ill health yet the onset of her fatal illness was by so sudden an invasion that it could be timed and occurred when she was feeling well To begin with her clinical picture was that of a severe general infection the local lesions appeared later She like Case 1, had received twelve 10 c cm doses of pentnucleotide before the day she died

Case 4 was a profound disappointment The diagnosis was made early, the local lesions were slight, and her general condition was good when the pentnucleotide was started Again six days elapsed between the first injection and the day of her death, and in that time she received a total amount of 140 c cm Yet hers was the most malignant case of all—the only one which showed hyperpyrexia—and with trifling local lesions she was dead in less time than Case 3 with her sloughs and hæmorrhages

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A CASE OF NEOPLASTIC DISEASE BELONGING TO THE HODGKIN GROUP

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A LOCOMOTIVE driver, aged 36, was admitted with "lumps in the neck" to the Royal Northern Hospital under the care of one of us (C) on June 27th, 1931. Nine months previously a lump had appeared in the left root of the neck and another higher up These had gradually disappeared. In January, 1931, another gland had appeared on the same side. This was removed at Tilbury Hospital and was said, on microscopic examination, not to be Hodgkin's disease. Shortly afterwards he had a sore-throat, felt very weak and lost weight, and glands appeared on both sides of the neck. He became steadily worse until admission.

PHYSICAL STATE AND COURSE OF ILLNESS

On admission to the Royal Northern Hospital he was pale and looked very ill His temperature was normal, his pulse-rate 120, and his urine normal Numerous enlarged, freely movable, smooth, and discrete glands were found in the anterior and posterior triangles of both sides of the neck, both axillæ and groins, and deep in the left iliac fossa , also a few glands in both antecubital fossæ, the right epitrochlear region, and the scalp A skiagram of the chest showed large masses (? glands) at both hila and in the right superior mediastinum The teeth were carious and the gums heavily infected. The tonsils were large and inflamed.

The heart was not appreciably enlarged, but had a feeble action There was hypostatic congestion of the bases of the lungs, also considerable œdema of the feet, legs, and lumbosacral region, and a moderate degree of ascites The liver was moderately enlarged, regular and firm, but not tender. The spleen was enlarged to 2–3 inches below the costal margin ; its surface was regular and smooth

A blood count on June 29th showed . 3,000,000 red cells , hæmoglobin, 58 per cent , colour-index, 0 96 , and 2400 white cells with a normal differential count. There was polychromasia ++, but otherwise nothing abnormal The blood condition gradually became worse and on August 26th it was as follows .—

Red cells .	..	2,200,000	Polymorph .	..	50 %
White cells	..	1,500	Lymphocyte .	.	41 %
Hæmoglobin	.	36 %	Eosinophil .	.	5 %
Colour-index	..	0 81	Large mononuclear	.	4 %

There were 15 nucleated red cells per c mm and 4 per cent. of reticulocytes

The Wassermann reaction on July 2nd was doubtful (±) The report on a gland removed from the right epitrochlear region on July 7th read "The glandular structure is entirely replaced by new growth, probably a true endothelioma. Cell division is active " On a submaxillary lymphatic gland removed on July 21st the report was " Structure similar to previous specimen "

Concurrently with increasing anæmia, in spite of vigorous treatment with iron and arsenic and some X ray applications to the glandular enlargements, he got weaker and more waterlogged. A course of Salyrgan injections was given intravenously and the X ray treatments continued Gradually all œdema and ascites disappeared and the glandular swellings began to subside He had, in all, eleven X ray treatments (given by Dr E. Hope at the Royal Northern Hospital) within three months Soon after beginning the X ray therapy he had also seven daily subcutaneous injections of Coley's fluid (♏ ¼, increasing to ♏ 4). He made rapid progress, so much so that he left the hospital on Nov 14th, 1931, much improved in every way. Dr. R. Gethen, his doctor at home, wrote · "The man looks a new creature " The glands were greatly reduced in size, there was no œdema, while the appetite and sleep were good. The liver and spleen were unaltered in size. A blood count shortly before discharge showed 4,000,000 red cells; hæmoglobin, 70 per cent , colour index, 0·8 , and 5000 white cells.

The patient was fit for four months and was at work as a locomotive driver for three of these months Then weakness and swelling of the glands began to return and seven months after leaving hospital he was admitted to the National Temperance Hospital (May 27th, 1932), again under the care of one of us (C)

The patient, as before, was very pale and ill-looking He perspired freely and was extremely weak. Lymphatic glands were considerably enlarged behind the ears, at the angles of the jaws, the root of the neck, and in the axillæ and groins ; also in the left iliac fossa and higher up in the abdomen on both sides There was slight ascites and slight œdema of the legs. The heart was very weak. The lungs were normal apart from some hypostatic congestion of their bases. The tonsils were enlarged and chronically infected. The urine was normal

He died on June 13th, 1932, 17 days after admission For the first six days the temperature touched 99°F., from then until death it was subnormal. The pulse rate varied from 94 to 130, and the respiration-rate from 20 to 26. Apart from some increase in red cells and hæmoglobin there was no apparent response to treatment; on May 28th the red cells numbered 2,540,000 and the hæmoglobin was 50 per cent.; on June 10th the red cells were 3,230,000 and the hæmoglobin 70 per cent The leucocytes were 6000 on admission, but just before death 24,000, of which 83 per cent were polymorphonuclears (an inflammatory leucocytosis) , no eosinophils were found.

POST-MORTEM EXAMINATION

Body well nourished Greatly enlarged glands present behind the ears, at angle of jaw, and in neck. Inguinal and femoral glands also much enlarged, but no obvious enlargement of mediastinal glands Lungs and heart were normal. Liver much enlarged with plum-coloured bosses of growth, some as large as plums, projecting all over the surface and studded throughout the organ. Although not encapsulated, these masses were definitely circumscribed, not infiltrating the liver tissue Gall-bladder encased in granulomatous or neoplastic tissue, not involving mucous membrane. Spleen greatly enlarged and studded with nodules as in the liver Retroperitoneal lymphatic glands much enlarged, as also those at hilum of liver and spleen, the whole mass projecting on surface of abdomen Glands were bound, but not fused, together, so that on section the outline of each gland could be separately distinguished Cut surface of glands and nodules in liver and spleen were

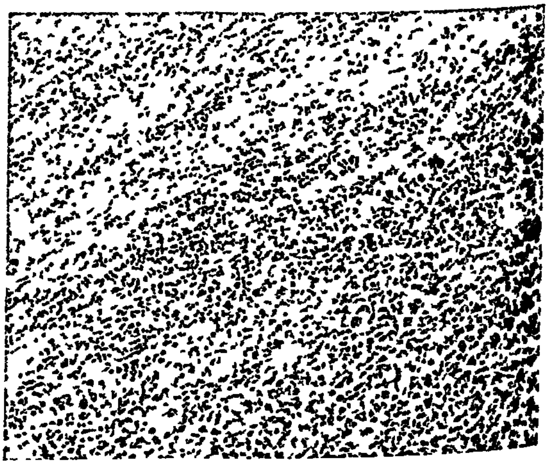

FIG 1 —Lymphatic gland . In the upper part (and to the left) are seen the lymphocytes much reduced in number, and increased reticulum In the lower part (and to the left) these are replaced by endothelial cells (× 70)

plum-coloured The upper fourth of the left femur was removed and bisected longitudinally the cancellous tissue in the head and trochanter had a mottled appearance with large yellowish white and red patches At the junction of the red and yellow marrow there was a large metastatic deposit, the upper portion of which was hæmorrhagic. Nothing abnormal was detected in the alimentary canal.

HISTOLOGY

Lymphatic glands.—Little of normal appearance remains Lymphocytes, except at the periphery, have been replaced by large endothelial cells, so that neither cords nor follicles can be distinguished In large areas endothelial cells form a continuous mosaic with a few lymphocytes scattered among them, but syncitial cells are not present, and in the more peripheral regions individual cells can be readily distinguished—polyhedral or elongated, the result of pressure, for in the peripheral sinuses they are spherical The large vesicular nuclei surrounded by scant protoplasm stain moderately deeply and many show mitotic figures While follicles and cords can no longer be distinguished, the sinuses filled with endothelial cells are more easily made out than in the normal gland, clearly showing their circular structure at the periphery and elongated or moniliform appearance in the more central area A few of the endothelial cells are much larger than the rest and closely resemble the Sternberg cells of Hodgkin's disease An occasional multinucleate giant cell of the same type can be distinguished. In most of the section very little reticulum is present, the cells being closely apposed but in some parts the reticulum is clearly seen and has even undergone hypertrophy The alveolar arrangement of the endothelial cells in the midst of this reticulum gives an appearance closely resembling an alveolar carcinoma In some glands there is considerable extravasation of blood Endothelial cells have not infiltrated the capsules of the glands

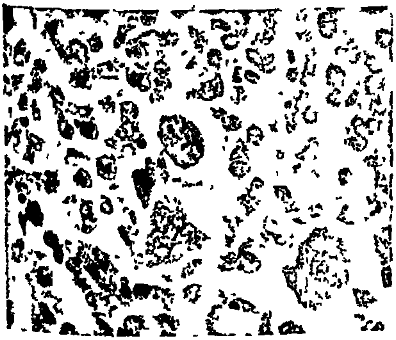

FIG 2 —A more highly magnified portion of (1) showing giant cells in the midst of endothelial cells (× 450)

Spleen—The superficial metastatic deposits in the spleen exhibit the same structural arrangements as in the lymphatic glands Lymphocytes are completely replaced by large endothelial cells and no follicles are present

Liver—Metastatic deposits similar to those in the spleen Hepatic tissue appears to be passively displaced rather than infiltrated, yet at the circumference of the deposit some strands of necrosed liver cells are present surrounded by endothelial cells

Gall bladder—Macroscopically normal but completely encased in granulomatous tissue Microscopically no involvement of mucous membrane or fibromuscular wall but outside the latter there is a thick layer of endothelial cells similar to those in the glands

Metastatic deposit in the *bone marrow* showed a similar histological structure, but lymphocytes were present in larger numbers than in the other metastatic deposits

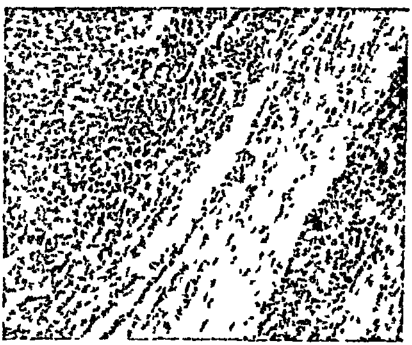

FIG 3 —Spleen, showing the same replacement of lymphocytes by endothelial cells (× 70)

DISCUSSION

In diagnosing the condition the following diseases had to be considered Hodgkin's disease, lymphatic leukæmia and a group of diseases eluding a dogmatic classification but described as endothelioma of lymph glands,[1 2] lymphosarcoma (Kundrat's[3]), and Hodgkin's sarcoma[4] The post mortem findings with the peculiar metastatic deposits in liver and spleen exclude ordinary Hodgkin's disease Lymphatic leukæmia was excluded by the blood picture and by the histological structure of the glands so that one must place this case in the third group The histological structure of the affected tissues bears a close resemblance to that of endothelioma of the lymph nodes described by Ewing[1 2] and by Pilcher,[5] and to that of the condition somewhat unfortunately called Hodgkin's sarcoma

No more can be safely maintained than that the lesions suggest a neoplastic condition of the reticulum cells such as is found in this third group of cases, which have this in common that many of the cases originate in an infective process and that in others such an origin seems probable Moreover, as Pilcher,[5] speaking of the spread of the glandular involvement, states "There appears to be an essential change in the gland with no suggestion of cellular metastasis from adjacent foci." Ewing[4] has expressed similar views Mervyn Gordon[6] and his co-workers, although they have not yet succeeded in reproducing lymphadenoma in animals, have brought forward evidence that a thermostable virus is the causative agent of the disease, and perhaps work on these lines may establish the ætiological relationship, which may be very close, of the members of this third group

It is possible that a further study of these ill-defined diseases may have an important bearing on current theories of the origin of cancer, and support the views of those who postulate a parasitic or virus factor in the production of this disease.[7]

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THE PREVENTION OF SECONDARY INFECTION OF TUBERCULOUS JOINTS

WITH SPECIAL REFERENCE TO IMMUNISATION WITH DICK TOXIN

By M C. Wilkinson, M B Lond.

MEDICAL SUPERINTENDENT, ESSEX COUNTY SANATORIUM, BLACK NOTLEY

Treatment according to the accepted principles is the chief means of preventing secondary infection of tuberculous joints Prolonged recumbency in the open air, proper splintage, skilful aspiration of abscesses, and asepsis in dressing sinuses are the chief of these, and in the large majority of cases produce healing of the disease In a few, however, these measures fail. The abscess reaches the skin, secondary infection occurs, and a process of acute followed by chronic suppuration is started which may end in amyloid disease and death Secondary infection is the chief menace to the lives of patients suffering from joint tuberculosis, its prevention is the chief anxiety of those entrusted with their treatment.

The following experience at Black Notley Sanatorium may be of value in indicating accessory methods of treatment which so far as can be ascertained have had the effect of reducing considerably the incidence of secondary infection among patients under treatment. The methods referred to are incision, curettage, and resuture of the abscess before it reaches the skin, when it can no longer be controlled by expiration, and possibly immunisation of children suffering from joint tuberculosis with Dick toxin

The former method is well known but has only been used by me during the last three years Seven cases in which the abscess threatened to point have been treated by this method since the beginning of 1932 In one case (L O Group II, Case 3) virulent secondary infection followed later The value of this method is due to the fact that large masses of granulation tissue, which form a nidus for the organisms of secondary infection, are curetted away before infection has occurred A sinus often forms after the operation, but this is less liable to become infected than an abscess infiltrating the skin and subcutaneous tissues

The second method, that of immunisation of children, suffering from joint tuberculosis, with Dick toxin, is reasonable when it is considered that a hæmolytic streptococcus may be found in virulent cases of secondary infection Staphylococcal infections produce prolonged suppuration and amyloid disease, but in the following small series of cases they have not proved to be a potent factor The value of this method is sub judice It is difficult to assess to what extent each method has contributed to the reduction in the incidence of secondary infection.

OBSERVATIONS IN THE SANATORIUM

The wards for children suffering from bone and joint tuberculosis were opened in July, 1930 During the following eight months two mild epidemics of scarlet fever occurred In April, 1931, Dr W. A Bullough, the county medical officer of health, advised that all children admitted to the sanatorium should be Dick-tested, and the positive reactors immunised against scarlet fever with Dick toxin From May, 1931, all Dick-positive children were immunised except those who had recently had scarlet fever Since then only one case of scarlet fever has occurred From July, 1930, to May, 1931, 42 cases were under treatment. Of these, four developed virulent secondary infection which in three cases led to advanced amyloid disease This incidence of secondary infection was above the average and it is possible that it was partly attributable to extraneous factors In addition, since May, 1931, there have been several boys treated in the men's ward who were not immunised Of these, two developed secondary infection: one healed, the other still has suppuration (I. N Group IA, Case 2)

Eighty-eight cases have been under treatment in the children's wards since May, 1931. The incidence of secondary infection in this group has been very small Two children were admitted with secondary infection · one Dick-immunised child developed a mild infection which healed well after incision The only virulent infection occurring after admission was in a child (L O. Group II, Case 3) who developed a hæmolytic streptococcal infection of the hip The hip was œdematous on admission and there were fluctuation and slight fever Aspiration and then curettage and resuture were done and a course of Dick toxin given A month after the last dose acute infection occurred. It is doubtful if immunity had at that time developed In spite of the virulence of the infection it subsided with remarkable rapidity and the child remains well

A comparable case (I. N. Group IA, Case 2) that had not had Dick toxin and which developed a hæmolytic streptoccal infection about the same time continued to go downhill when this child was healing

One patient (C F. Group IIA) in whom secondary infection was present on admission did develop amyloid disease; the infection was staphylococcal, the child is now recovering, his general condition is good, and there remains only some enlargement of the liver and spleen No case, not infected on admission, developed amyloid disease

From the beginning of 1932 all abscesses that threatened to point were treated by incision, curettage, and resuture The three cases that developed amyloid disease prior to May, 1931, had not been treated by this method Seven of the cases in the second group were treated by curettage and resuture Of these only the case L O referred to above developed secondary infection

The following is a summary of the cases —

Group I—Cases that became secondarily infected in children's wards prior to introduction of immunisation with Dick toxin or treatment by curettage and resuture Cases under treatment 42 Cases of secondary infection, 4. Cases of amyloid disease, 3

Group IA—Two cases of secondary infection among several boys treated in the men's ward, not immunised or treated by curettage and resuture

Group II—Cases that became secondarily infected after admission to children's ward, subsequent to introduction of Dick-toxin immunisation and curettage and resuture. Cases under treatment, 88 Cases infected, 3 No cases of amyloid disease

Group IIA—One case infected on admission, developed amyloid disease but is recovering

PARTICULARS OF SECONDARILY INFECTED CASES

GROUP I

Case 1—O R Admitted July, 1930, with psoas sinus. Infection with high temperature in September, 1930. Psoas abscess opened and drained Bacteriological report streptococci Discharged well Sinuses healed

Case 2—K B Admitted July, 1930, with advanced hip disease In September developed mild scarlet fever Abscess broke down in November Virulent infection occurred in January, 1931 Several operations for drainage

Bacteriological report staphylococci Bacteriological report from sinus, October, 1931 streptococci Amyloid disease developed May, 1932 This boy was not immunised in 1931 as he was presumed to have been protected by his attack of scarlet fever

Case 3.—L S Admitted November, 1930 with advanced hip disease Abscess broke down and became infected in March 1931 Operations for drainage Bacteriological report hæmolytic streptococci Two doses of toxin given after the incidence of the infection Case progressed to amyloid disease

Case 4 —B V Admitted January, 1931 Hip became infected February, 1931 Developed amyloid disease which progressed No bacteriological report

GROUP IA

Case 1.—R V Admitted June, 1932 to adult ward with tuberculous spine, and sinus from psoas abscess Secondary infection occurred March, 1933 Operation for drainage No bacteriological report Discharged with sinuses healed

Case 2 —I N Admitted in June, 1933 after excision of tuberculous hip Result thought to be good Discharged after three months Readmitted March, 1934, with recurrence of hip disease Multiple abscesses developed under scar soon after admission Secondary infection occurred and became virulent Several operations to drain Bacteriological report hæmolytic streptococci Fever continued and condition deteriorated 13 c cm of anti scarlatinal serum on August 1st, 1934 Dick toxin injections July–August, 1934 The prognosis in this case appeared to be bad but there has been improvement recently

GROUP II

Case 1 —K V Admitted November 1932 with tuberculous knee Dick positive Immunised January, 1934 Mild infection of abscess of knee occurred in February, 1934 Abscess opened and drained Bacteriological report before infection tubercle bacilli No report after infection Sinus healed after three months

Case 2 —R B Admitted July, 1931, with tuberculous disease of hip, abscess, and fever Clinical appearance of infection Incised and drained Bacteriological report cultures sterile Temperature subsided Report from pus from sinus in October staphylococci Dick immunisation in April, 1932 Discharged in December 1932 Sinuses healed

Case 3 —L O Admitted February, 1934, with tuberculosis of the left hip, with abscess Œdema present, slight fever Bacteriological report following aspiration showed T B cultures sterile On March 27th curettage and resuture as abscess was pointing Cultures again sterile Dick-toxin immunisation March–April, 1934 On April 24th there was still slight fever and induration was present On May 24th temperature 103°, infection virulent Following several operations for drainage, hæmolytic streptococci were found The infection appeared to have become established but recovery took place with unexpected rapidity General condition now good In July temperature normal, sinuses healing rapidly In October sinuses healed The unexpectedly rapid healing may have been due to the artificial establishment of immunity

GROUP IIA

C F Admitted April, 1931, tuberculous left knee with sinuses, clinically secondarily infected Two months later onset of tuberculosis of right knee Dick negative Staphylococci found in sinuses from knees Also T B from right knee Wassermann reaction negative Liver and spleen became large, and child presented amyloid appearance, but condition improved later, and is now excellent

It will be noted from the above that out of 10 infected cases the bacteriology of the most virulent was as follows —

L S	Advanced amyloid disease	Hæmolytic streptococci
K B		Staphylococci, followed by streptococci and *B pyocyaneus*
B V		No report
C F	Amyloid disease aborted	Staphylococci
I N	Virulent infection	Hæmolytic streptococci
L O		
O R	Infected psoas abscess	Streptococci
R V		No report

SUMMARY

If aspiration fails incision, curettage, and resuture of abscesses before the advent of secondary infection is of extreme importance (2) The possible use of Dick toxin for the prevention of virulent secondary infection deserves further investigation

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MEDICAL SOCIETIES

LIVERPOOL MEDICAL INSTITUTION

AT a meeting of this institution on Nov 29th, with Dr J MURRAY BLIGH, the president in the chair, a paper on the

Parathyroid Glands

with particular reference to their growth retarding functions, was read by Dr T LLOYD HUGHES The work of Thompson and Robinson in 1931, he said, had led to a study of the possible relationship between the parathyroid oxyphil cells and the growth retarding hormone In his own investigation the parathyroid glands were removed post mortem in 200 cases, and were examined for numerical anatomical, and histological variations The oxyphil cells content of all the glands was numerically computed according to a method modified from the one used by Rasmussen in counting the oxyphil cells of the anterior lobe of the pituitary It showed a more or less regular increase with age, but in cases of malignant disease the number was reduced below the normal for the age period This reduction might indicate an absence of growth retarding hormone—a deficiency which might allow of malignant hyperplasia if the necessary stimulus was forthcoming Thus it was possible that the oxyphil cells had a special function related to the growth retarding factor isolated from the parathyroids, and were not, after all, degeneration products of the principal cells

At a meeting held on Dec 6th, with Dr J MURRAY BLIGH the president, in the chair, a paper on the use of

Antistreptococcal Serum in Certain "Rheumatic" Affections

was read by Dr ROBERT COOPE and Dr F PYGOTT They prefaced their remarks by a quotation from one of Trousseau's clinical lectures 'When a patient runs an imminent risk it is justifiable, or at least it is excusable, to use every remedy as in such a case we cannot make bad worse Still even in such cases our therapeutic action must be defensible in theory and by an appeal to analogy They presented for consideration a series of nine [illegible] cases in which they had felt driven by clinical necessity to try the effect of antistreptococcal serum One patient, a middle aged man had a post scarlatinal non-suppurative arthritis of the hip joint which did not improve with [illegible] and heavy dosage with salicylate intra-muscular injection of 20 c cm of scarlatinal antitoxic serum was followed by rapid recovery. The remaining eight patients, all adults, were seriously ill with acute polyarthritis, and in all but one there was a clear history some 9 to 12 days previously of severe "sore-throat." In four of them the illness was associated with erythematous nodules in the skin; they were patients whose ages varied from 43 to 52, and there was no evidence of active tuberculous infection. Their erythema nodosum was but an incident in a generalised severe "acute rheumatism" which did not improve on intensive treatment by salicylate. They all responded quite dramatically to one or two doses of serum (in two cases scarlatinal antitoxin was used, in the other two cases polyvalent streptococcal antitoxin). Of the other cases, one was desperately ill and incontinent, but after the injection of 20 c cm of the polyvalent serum on two successive days he was greatly improved and went on to full recovery. In another patient, a woman of 35 who at the time she fell ill was actually waiting to be admitted for removal of unhealthy tonsils, the acute polyarthritis was complicated first by a toxic nephritis and later by double basal pneumonia Blood culture revealed a non-hæmolytic streptococcus, and two doses of 20 c cm. polyvalent antistreptococcal serum were given The general condition improved, but she then developed an intense urticaria and serum sickness and nearly died. After that, however, the temperature fell to normal and she slowly recovered.

The remaining two patients were not quite so gravely ill. One young man, in spite of treatment and the disappearance of his fever, had a series of relapses of the arthritis. Three days after a single injection of 20 c cm of scarlatinal antitoxin the pain and swelling of the joints subsided, and there were no further relapses. Another patient, seriously ill with polyarthritis and pericarditis, improved temporarily after 30 c cm of serum, but later had a series of relapses, involving the throat and joints. Looking back on the case, they felt that at the time they lacked confidence to repeat the injection and should have done so. In all the cases treatment by large doses of salicylate was ineffective. In the light of these experiences Dr. Coope and Dr. Pygott suggested that whatever may be the effective mechanism of recovery, whether specific or non-specific, the use of serum treatment in similar cases was worthy of trial

Sterility due to Ovarian Dysfunction

Mr. T. N. A. JEFFCOATE read a paper based on the records of 654 patients complaining of sterility of at least two years' duration. No abnormality of any kind was found in 17·3 per cent. of the cases, while 12 3 per cent. had no gross lesion but complained of some menstrual upset—in addition to sterility Mr. Jeffcoate thought that the poor results attending treatment of this condition are due to failure in the diagnosis of the underlying cause, which often lay in some physiological upset in the ovary. All menstrual disturbances, apart from epimenorrhœa, were characterised by absence of or infrequent ovulation; hence the sterility encountered in patients presenting these symptoms Examination of premenstrual curettings from 63 patients who had regular uterine hæmorrhage (but did not necessarily complain of sterility) showed that about 25 per cent exhibited anovular menstruation. This condition was probably even more prevalent in patients complaining of sterility. Curettage during the premenstrual or menstrual phases was an essential part of the investigation of sterility, for in this way anovular menstruation should be recognised. Mr. Jeffcoate concluded by outlining a method of treatment of this type of ovarian dysfunction.

In the discussion which followed, Mr. M. DATNOW said there could be no doubt that insufficient stres had been laid on dysfunction as an ætiological facto in sterility, this was evidenced by the common lay fallacy that a woman is most fertile just after and just before menstruation, instead of during the middl fortnight of her cycle. The fact that menstruation could occur without ovulation (anovular cycle) had been recognised (although controverted) for som considerable time. In rabbits not infrequently th follicles did not rupture and pseudo-pregnancy ensued, with all the uterine and general changes o pregnancy, terminating with lactation about 17 day after œstrus. Mr. Datnow spoke of the importance o inquiring carefully into the menstrual history o every patient who complained of sterility The tim of follicular rupture was fairly constant for any particular person and he had frequently been told by patients that they always became pregnant on o about the same day of their cycle This made him advise his patients, who sought advice for thei sterility, to resort to coitus during different week of the cycle each month. He pointed out the importance of correlating the ovarian picture with th histological findings in the endometrium. In patient suffering from dysfunction and irregular menstruation there was no doubt that one could see histologica appearances illustrative of all the phases of th endometrial cycle in any one uterus He was no convinced that curettage and examination of th curettages would be of any more value than merely to prove that there was dysfunction. He felt that i was more important to make an analysis of th hormonal content of the blood and urine in thos cases of *sterility with dysfunction,* which really only formed a very small proportion of the total, in orde to determine those hormones that were in excess o lacking so that the appropriate treatment could b applied. It was the absence of a fertilised ovum rather than the presence of a new "hormone Z" (suggested by Mr. Jeffcoate) which precipitated the *menstrual flow.*

PEOPLE'S LEAGUE OF HEALTH—At the annual general meeting of this organisation, held in London on Dec 12th, Dr C O. Hawthorne, the chairman of council, referred particularly to the League' endeavours to secure not only a clean but a safe milk-supply It had pressed forward the various points set out in its report on Bovine Tuberculosis published in 1932, and had supplemented it by authoritative memoranda to the Ministers of Health and Agriculture. To one proposal of the Milk Marketing Board the League had taken the strongest exception—namely, the Accredited Herd and Producers' Milk Scheme. "Accredited" milk might claim to be "clean", it certainly could not claim to be "safe" Miss Olga Nethersole, founder and hon. organiser of the League, spoke, among other activities, of the health talks and lectures given in prisons. In dealing with future developments Dame Louise McIlroy suggested that the League might appropriately furnish a liaison between the public and the medical world on the question of the nutrition of expectant and nursing mothers as affecting maternal mortality and morbidity She felt that malnutrition was one of the fundamental causes of maternal mortality and the cause of many diseases and accidents of pregnancy. Sir Leonard Hill cordially supported this proposal and also spoke in support of a scheme for the establishment of national boarding-schools to which children from overcrowded slum districts might be sent on medical recommendation. Sir Pendrill Varrier-Jones mentioned that at Papworth, where the diets advocated by nutritional experts were followed, the medical officers had lost no child or mother in childbirth.

REVIEWS AND NOTICES OF BOOKS

Atlas of the Commoner Skin Diseases

By HENRY C G SEMON, M A, M.D Oxon, M.R C P Lond, Physician for Diseases of the Skin, Royal Northern Hospital Photography under the direction of ARNOLD MORITZ, B.A, M B, B C Cantab Bristol John Wright and Sons, Ltd, London Simpkin Marshall Ltd 1934 Pp 219 42s

SOME years ago a questionnaire addressed to past members of the Fellowship of Medicine inquiring in what subjects they were most interested brought replies showing dermatology an easy first This might be interpreted as revealing a dark spot in undergraduate medical education The system of instruction has got somewhat out of focus If the practitioner finds when he embarks on his career that he is imperfectly equipped to diagnose and treat a number of "minor" conditions, of which skin diseases form a considerable proportion For if these do not threaten life they do prevent the patient from working and maintaining his position in the economic structure Dr Henry Semon and Dr Arnold Moritz have here gone a long way towards meeting the practitioner's needs, for their Atlas provides him (and the student) with a very good substitute for a dermatological clinic The arrangement of the diseases in alphabetical order makes for easy reference and for easy identification of a particular eruptive process in an emergency, while the book has sufficient general interest to be read in moments of leisure Each of the 103 coloured plates is accompanied by a short but adequate description, to the compilation of which Dr Semon has clearly given much thought and care The essentials of diagnosis and treatment, thus presented, are exactly what they should be, precise and sufficient, and they are amplified by the frequent reference in the text to features represented in the plates In describing their book as an Atlas the authors direct the attention to the illustrations as an outstanding feature. Those who have endeavoured to photograph eruptions by the ordinary process know how difficult it is to obtain a faithful reproduction of the minute structure of disease, when a colour process is employed all the difficulties are enormously increased Dr Moritz's achievement, using the Finlay colour process, in overcoming technical difficulties is remarkable, the colour reproductions exactly represent the appearances seen on the actual patient

Science and Practice of Surgery

Fifth edition By W H C. ROMANIS, M.A, M.B, M Ch Cantab, F R C S Eng, F R S Edin, Surgeon and Lecturer on Surgery, St Thomas's Hospital, and PHILIP H MITCHINER, M.D, M S Lond, F R C S Eng, Hon Surgeon to H M the King, Surgeon and Teacher of Operative Surgery, St Thomas's Hospital In 2 vols Pp 1751 London J and A Churchill Ltd 1934 24s each vol

WHEN a student's text book of surgery becomes and remains popular editions appearing in quick succession, it is clear that the subject has been treated comprehensively, lucidly, and attractively The authors of this book have shown great judgment in the presentation of the facts of surgery and in the selection of those essential to the equipment of the undergraduate up for his finals. Moreover he will need no supplementary surgical volumes, for all the special branches of surgery are adequately dealt with. Much of the sections on diseases of the eye and on the nose and throat have been rewritten, and a rather satisfactory plan of printing all descriptions of operations in a different type has been adopted Though a great deal of revision has been carried out and new matter added in the fifth edition, the book as a whole has actually been reduced in size

Romanis and Mitchiner's surgery is a treatise with an established place which can be confidently recommended as one of the best text books in the English language

Definite Diagnosis in General Practice

By W L KITCHENS, M.D London and Philadelphia W B Saunders Co, Ltd 1934 Pp 958 45s

IN this book Dr W L Kitchens has collected and tabulated 506 symptoms "of definite diagnostic significance" and 407 "disease entities." By an ingenious system of cross-references the reader is supposed rapidly to discover in which of these diseases any given symptom may arise and, conversely, what are the significant symptoms of any given disease (It should be explained that the term "symptom," as used by Dr Kitchens, includes physical signs) Thus, to the possessor of this book, diagnosis becomes merely a rule of thumb or, rather, a penny in the slot affair without the penny—apart from the initial purchase price

It is conceivable that there are doctors who will be glad of a diagnosis machine of this kind though it is probable that, like lonely people who keep a frog, they are extremely rare The book is admittedly incomplete—Dr Kitchens in fact invites the reader to fill in the gaps and even leaves ample spaces for this to be done, it is also unscientific and inaccurate For example, trypanosomiasis and epidemic encephalitis lethargica are apparently lumped together as one disease entity under the heading of "sleeping sickness" It is easy to avoid the grosser diagnostic errors without the aid of books like this, and one might reasonably conclude that the only thing definite about a diagnosis of sleeping sickness made on the lines here suggested is that it would be definitely wrong

Human Sterility

By SAMUEL RAYNOR MEAKER, M.D. London Baillière, Tindall and Cox 1934 Pp 276 15s

No one has given more time and attention to the study of the problems of human sterility than Dr S R Meaker and this able work will be read with great interest The fact that he has been responsible for the establishment in America of special clinics at which both the male and the female sides of the problem of sterility are fully investigated has given him exceptional opportunities of assessing the factors that contribute to childless marriage At these clinics the husband and wife who have failed to produce a family undergo an examination lasting a week. This includes not only a complete clinical overhaul, but also various metabolism tests carried out in order to bring to light any endocrine insufficiency That this is an important part of the routine investigation is shown by the fact that pituitary dysfunction was discovered to be present in over 30 per cent of cases and thyroid failure in 20 per cent of cases of impaired fertility in the male Usually a full diagnostic study of a sterile couple reveals the fact that more than one condition depressing the conceptive mechanism is present Treatment must therefore be directed to the amelioration of all the factors hostile to conception This multiplicity of factors also explains the riddle of selective fertility and does away with the necessity of presupposing such subtleties as physical or psychic incompatibility Selective fertility is due merely to the result of the sum total of depressing factors contributed by a given man and a given woman when united together in an effort to produce a family.

This is the record of a vast amount of painstaking work Nobody but an enthusiast could have carried through the scheme of research that Dr Meaker evolved in the establishment of his clinics, and nobody who is interested in the same problem can fail to be stimulated by his book.

Practical X Ray Therapy

By HUGH DAVIES, M.A Oxon., M.R C S Eng., D M R E. Camb., Officer-in-Charge of X Ray Therapy, King's College Hospital; Hon. Assistant Radiologist, National Hospital, Queen-square. London. J. and A. Churchill Ltd. 1934 Pp 134. 8*s* 6*d*.

THIS little book is intended for the student rather than the expert On the whole the facts are presented clearly and without any attempt to crowd in technical details not required for a general outline. A chapter on biology explains concisely the changes produced in the cell by irradiation, and the section devoted to the apparatus required for deep X ray therapy is designed to give the reader an idea of the mechanism whereby penetrating X rays are produced. The measurement of dosage and the factors which affect it are next discussed, and also the importance of the unit skin dose, and of the percentage depth dose. The time factor is mentioned, but in view of the present interest in fractional dosage and intensity, more space might have been devoted to the relations to the treatment of malignant disease The section on treatment is divided according to the region to be treated, and the directions given follow, for the most part, the accepted lines, although the author hardly gives the impression that he himself is satisfied that all the conditions mentioned are really suitable for X ray therapy. He tells us that the suggested doses are based on the fractional method. Any attempt to treat patients from the descriptions given without further instruction would be unsafe; there is no indication that the author expects this attempt to be made, but this is pre-eminently a field where a little knowledge is dangerous, and we trust that readers will realise this A short bibliography is provided at the end of each chapter

Knights of St. John in the British Empire

By Colonel E J KING, C M G, F S A St. John Ambulance Association, St. John's Gate, London, E C 1934 Pp 268 7*s* 6*d*

Colonel King, who has written much on the British Order of the Hospital of St John of Jerusalem, gives us the official history of the Order brought up to date An earlier edition, published some ten years ago, had for its purpose a description of the part played by Englishmen since the revival of the Order, but the activities of the Grand Priory during the interval afford much fresh material. In particular the work of the Order for humanity, as exemplified by the St. John Ambulance Association and Brigade both at home and overseas, has been notable

The history of the Order is set out here in full detail and many of the episodes are truly dramatic The Order was founded when the first Crusaders under Godfrey de Bouillon captured Jerusalem and discovered there an ancient hospital for Christian pilgrims This Duke Godfrey endowed, and the Order of the Hospitallers of St John took shape with the double object of fighting for the Cross against the pagan and of providing medical aid for Christian travellers to the Holy City The Knights Hospitallers were soon to be associated in their work for Christianity with the Knights Templars, a purely military order, also making itself responsible for the safety of Christian pilgrims, and the two Orders became a prominent part of the fighting force of the little Latin kingdom of Jerusalem, and for some 200 years battled to save that kingdom from its inevitable doom. Through the vicissitudes of the Order under many great Masters we see its tenacity in the face of adversity, and when the Latin kingdom of Jerusalem, betrayed by western supporters and surrounded by increasing Moslem power, came to a virtual end, the Knights of St John kept for many years some hold on strategic points along their old coast line, looking for the day of recovery That, however, never came, and in 1310 the Knights took possession of Rhodes, becoming a Sovereign Order, while their wealth was increased by the transfer to them of the revenues, it is true much diminished, of the suppressed Order of Templars Rhodes was held by the Knights for over 200 years and was the scene of two famous sieges, of which the latter one resulted in the loss of the island in 1520 The Order, quite undefeated, now established itself in Malta and for some 300 years was a notable landmark of chivalry, but the Reformation brought with it fundamental troubles to all old Christian foundations The original object of the Hospitallers being the establishment and maintenance of the catholic faith in the face of Moslem aggression, the natural patron of the Order was the Pope The papal responsibilities, however, seem to have been capriciously discharged, and when England and the Pope were at issue the Order suffered Oppressed under Henry VIII fairer prospects seemed to open up under Mary to die down again under Elizabeth, and practically the activities of the Order became centred in Malta, to come to a temporary end when Malta was seized by Napoleon at the close of the eighteenth century

The history of the Knights Hospitallers on the continent was so eventful as to overshadow their work at home in the minds of most of us, but Colonel King does justice to the splendour of the "English Tongue" of the Order in their famous establishment at Clerkenwell and their other commanderies in Great Britain and Ireland He thus supplies the reason for the restoration of the Grand Priory in the British Empire, and the story of expansion which follows is unbroken It is made historically dramatic by the fact that the work now done at the hospital of the Order in Jerusalem, and by the St John Ambulance Association and Brigade in peace and war, wherever and whenever the call may come, is a logical development of the duties of the Knights Hospitallers as enjoined upon them by vows taken over 800 years ago. Colonel King does justice to his big theme in a record which is of historic interest from both ancient and modern aspects, and the format and illustrations are excellent.

THE LANCET

LONDON. SATURDAY, DECEMBER 29, 1934

A VISION OF HEALTH

"WHERE there is no vision the people perish," ut there is hope when our young men see visions nd our old men dream dreams Both Dr VEITCH LARK, in his recent presidential address[1] to the ociety of Medical Officers of Health, and Dr F R EYMOUR, in a Chadwick lecture entitled "Men nd Masses" delivered on Dec 10th, contrasted he public health conditions of past ages with hose of to day and showed us something of their ision of the future Dr CLARK, indulging in 'a little unfettered mental browsing," reminded s that it is not many years since those who dvocated much of what is now routine were looked n as visionaries with freakish ideas But it was n the practical imagination of these pioneers that he foundations of life saving in aggregated modern ommunities were laid He contrasted the ravages f infectious disease in the past with the solid round we tread to day in the daily practice of reventive medicine Dr SEYMOUR deprecated ndue optimism in attributing all the credit for he reductions that have taken place in various iseases to our established methods of sanitation iseases have a periodicity of their own and their ncidence rises and falls independently of our fforts to diminish them Yet even this is no round for pessimism or for relaxation of effort ince infectivity and virulence are independent, aves of increased infectivity may be postponed ntil a time when virulence is in the trough

In regard to the future, both addresses opened p a field of philosophic speculation Dr CLARK emarked that, useful as it may be to lower the eath rate, preventive medicine is concerned not ith the dead but with the living In his view he great mass of human minor ailments, which makes for so much of life's discomforts and estraints, is the result in succeeding generations f damage done to parents or grandparents by the resence of one or more of the great disabling iseases—syphilis, tuberculosis, and rheumatism, n the generations begotten by those who have uffered from them, disabilities are directly caused by the transmission of an injured germ plasm We are refreshed, as by a clear wind from the hills, if we can conceive of our preventive work gainst systemic diseases as laying a foundation on which, in the generations to come, will be built the work of abolishing those chronic indispositions the sum of which so dims and blots the brightness of the joy of living Dr SEYMOUR speculated on possible future lines of advance in preventive medicine in terms of the law of cause and effect The chain may be long, but wise men have here and there succeeded in picking up the successive links, only the foolish deny a possible causal relation between two events, even though it appears at first sight improbable and far-fetched, until every known means of proof and disproof has been exhausted The more widespread the operation of a cause, the less likely are its results to be recognised as such Among primitive races the birth of a child was not known to be causally related to the procreative act; the wearing of corsets was once so prevalent that the physiology books of the early nineteenth century described a male abdominal type of respiration and a female upper thoracic type, little wotting that the cause was whalebone; night air was regarded as dangerous until someone opened the windows and demonstrated that the only thing wrong about night air was that it was never admitted into our houses

Of micro-organisms, for a time the *ultima thule* of inquiry into infectious disease, some, said Dr SEYMOUR, have been shown to be in themselves completely non virulent

> "In disease due to organisms of several, perhaps of very many kinds, the disease begins only if special circumstances are present, in which *some change* in the body, due to some other factor than the infecting parasite itself, has been brought about, the defence or immunity of the host is complete as against the parasite so long as that is acting alone"[2]

It may therefore be admitted that in the coccus, bacillus, spirochæte, or ultra-filtrable virus, we have not reached Spinoza's *transeunt cause* of infective disease, the cause that is essentially distinct from and not included in the effect, the thing that is sufficient to produce another different thing In support of such a view Dr SEYMOUR adduced the fact that what is now regarded as evidence of disease used, at an earlier period, to be regarded as evidence of a predisposition to disease Writers of the Chadwick epoch regarded contaminated water as a predisposing cause of cholera, and conversely the Tibetan looks on tea as a prophylactic against typhoid fever So too the little extra exertion that leads to an attack of apoplexy is no more than a detonant that fires a train already long laid It may be that in many diseases, including some that are not regarded as infectious (for there is no necessary association between "infectious" and "preventable"), what we now consider to be predisposing causes may turn out to be in fact early stages of actual disease Expressed diagrammatically, as Dr. SEYMOUR put it, our health line is doubtless far below the level that it should, and may in the future, attain, but each of us has what we regard as our normal level of health, subject to little ups and downs according to season, temperament, transient illness, accidents, and other factors On being attacked by a definite disease the health line will show a dip, to an extent depending on the severity of the illness, and if the disease be a progressive one, the line will get continually lower until it reaches zero But the student of preventive medicine centres his interest on the point at which the health line *begins* to leave the horizontal Clearly, the greater the drop, the greater the difficulty in returning to normal The diagnostic faculties and facilities of 200 years ago were not fine enough to enable the existence of "consumption" to be established until it was fairly far advanced, for the writers of that period clearly describe as "*threatened with consumption*" what we now know are early cases of definitely established disease. Earlier diagnosis greatly increases the prospect of restoring the individual to normal health, because there is less leeway to make up, the fall below normal at the earlier stage being much less than at the later. Our art has therefore for one of its aims the pushing back of the point of time at which diagnosis is made until it gets closer and approximates to the point marking the onset of morbific effects When we shall have done *that* there is a further field—namely, the pushing back of the moment of diagnosis until it predates the onset of manifest illness, there being always a time lag between that and the earliest beginnings of disease.

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[1] Public Health, November 1934

[2] Med. Research Council, Annual Report, 1933-34

An aim, according to the late Lord **Balfour**, to be worthy of pursuit, must not only exhaust our energies but also transcend our aspirations. The search for the *transeunt cause* of disease is then a worthy aim It will tax our energies for countless generations and for countless generations it may elude us. But advance we have made and much more advance we shall make Both Dr. **Seymour** and Dr. **Veitch Clark** urge us to go back and back and still further back in the life-history of our patient and of our race in our search for the true origins and real causes of the ills from which the human body suffers. Who shall say that in this they are misdirecting us ?

EPSOM COLLEGE

There will be found this week in our advertisement columns a detailed statement from Major W L. **Giffard**, the secretary, concerning Epsom College as a public school of general scope, connected with a medical foundation. The statement is excellently clear in bringing out the two sides of the College, and we refer our readers to it (vide The Lancet General Advertiser, p 29) Certain difficulties arising out of the double organisation were alluded to in a pointed manner at the last annual meeting of the Old Epsomian Club At this meeting Mr R M **Handfield-Jones**, himself an Old Epsomian, speaking from the chair at the annual dinner, said that the benevolent side of the foundation must be divorced from the school

In many matrimonial affairs, to which the word divorce inevitably directs attention, difficulties are often adjusted with success before drastic procedure is found advisable, and while Mr. **Handfield-Jones**'s pronouncement met with useful support, those who know the circumstances of the foundation, and those who digest the significance of Major **Giffard**'s statement in the advertisement section of this paper, will see that, while adjustment may be called for, anything in the nature of divorce will require justification before practical steps can be taken, and these will need much thinking about Is the status of the school prejudiced in the public mind by an impression that, because of the original foundation, all the boys at Epsom are beneficiaries under some charitable scheme ? This is a view that cannot be widely held, and is quite mistaken Epsom College ranks as one of the public schools of the kingdom, the concession to the medical profession being that there is, apart from the scholars, a small reduction in favour of the sons of doctors from the annual fees, made upon the same principle as that upon which at other schools reductions are made for the sons of the clergy or of officers in the army The original foundation of Epsom had for its object, first, the provision of pensions for aged, disabled, or impoverished men or their widows ; and, secondly, the grant of scholarships to the sons of deceased medical men who were unable during their lives to accumulate money for the education of their children, or who are to-day in reduced circumstances To maintain the benefits of this foundation there is an urgent need of funds There are now at Epsom 56 scholars who are boarded, clothed, and maintained at the expense of the foundation They are elected from among the sons of necessitous or deceased medical men or women, and the claims to the benefit are rigorously scrutinised by the council of the College, a governing body of a very representative character A sum of over £10,000 is required annually to meet the cost of the foundation scholars and the pensions, while there is ample evidence that much more money is required so that the work should be extended.

The original founders of the College, while having the charitable side of the institution always prominent in their minds, desired that the education given to the beneficiaries should be that which boys receive at first-class schools, and owing to the sagacious and devoted manner in which the educational curriculum has been supervised over a long period of years the training at the College has been in all directions comparable with that given at similar institutions. Boys are prepared for the services, civil and military, for the universities, and for professional or mercantile careers. Provision has been made for all the amenities of a big public school and leaving scholarships have been founded But funds are urgently needed that this steady rate of progress should be maintained, and we commend the foundation of Epsom to the attention of our readers We have done so before on many previous occasions, and acknowledge with gratitude the large response that has followed from a profession which is not composed of many wealthy men The finest form of assistance which those in our profession who have can give to those of their colleagues who have not, is the provision that the children of the latter shall have the opportunities for making good, which their parents have been unable to assure to them We speak for a cause which justifies itself not only on its merits but by the excellent use which has been made, and is being made, of all subscriptions, gifts, and bequests to the College. The story of Epsom is one of progress, while the indications for lines of advance are such that they must call for substantial support in money.

STAPHYLOCOCCUS FOOD POISONING

THAT certain staphylococci can produce food poisoning has been established not only by monkey tests with sterile filtrates but by a large number of experiments with human volunteers.[1] Moreover, several outbreaks have now been recorded where the staphylococcus has been definitely incriminated. The isolated strains differ widely both in cultural and in agglutinative characters. Some are hæmolytic, some are not, some are of *albus*, some of *aureus* type. Prof. E. O. JORDAN of Chicago has shown also that the strains producing toxic filtrates are not restricted to those isolated from implicated foods but may be derived from many sources, including normal and diseased human throats.

The vehicle in which the organism is conveyed is mostly "cream cakes," filled with custard rather than pure cream, although in the first recorded outbreak (M. A. BARBER, 1914) the agent was milk. Cream filled pastries often contain a few staphylococci, but the sound articles do not appear to contain organisms in numbers comparable to those found in the implicated foods. With W. BURROWS, JORDAN has recently described[2] five characteristic outbreaks which occurred in America in 1932 and 1933. The first of these, in Milwaukee in March, 1932, involved 54 persons, all of whom had eaten custard filled pastries; from an uncut cream filled cake of the same batch numerous staphylococci were isolated. From one strain a toxic filtrate was obtained, and 20 c.cm. of this filtrate given by mouth to a rhesus monkey caused violent vomiting 4½ hours later. All the victims were violently ill after an incubation period of about three to four hours; none died. The second outbreak was in Chicago in April, 1932; 31 persons were affected, the vehicle being again cream filled cakes. The incubation period was similar, and again nausea and vomiting were the most characteristic symptoms. Staphylococci were isolated and sterile filtrates caused violent vomiting in several rhesus monkeys. The third outbreak occurred in Milwaukee in May, 1932 and involved seven children, all of whom had eaten custard-filled coffee cake. The staphylococci isolated produced a filtrate toxic to a monkey, and the same applies to that obtained from dough nuts filled with custard associated with the illness of two persons in Chicago in the same month. The outbreak in Winona in May, 1933, involved several cases, the vehicle being chocolate eclairs, and from these also a staphylococcus was isolated yielding a filtrate toxic to monkeys.

Several features associated with staphylococcal food poisoning still remain obscure. Although the number of recorded outbreaks amount to a dozen or more, they are rare indeed when we consider the probable frequency of infection of foodstuffs with the organism. Toxin producing staphylococci are not uncommon, and there must be some unknown factors which cause them to produce enterotoxic substances in certain cases. In the laboratory various methods may have to be tried before toxic filtrates are obtained; in these recorded outbreaks the best results were procured when the culture was incubated in an atmosphere of 20 per cent. CO_2. A suitable medium is essential, and it is noteworthy that custard-filling standing at room temperature is likely to be an excellent culture medium. Another curious feature is the geographical limitations of the proved cases. Almost all have occurred in America, and although since the establishment of staphylococci as a source of food poisoning English bacteriologists have been on the look-out for them, no outbreaks have been recorded in this country, though staphylococci are as common here as in America, and cream filled cakes are much consumed. The conditions favourable to the production of toxin from the organism appear to be even less prevalent here than in America. This circumstance has led some workers to doubt the incidence of food poisoning due to these organisms, but the evidence supplied has convinced most toxicologists and the facts now seem to be well established.

VESTIGIAL SURVIVALS IN THE POOR-LAW

FROM time to time, in our public health and other rate aided services, there are signs of a too rigid regard for local boundaries. Summoned to the scene of a traffic accident, an ambulance stops short and goes home because the victim is lying a few yards beyond some invisible line of demarcation. A patient is refused admission at a council's hospital because he is only a temporary visitor to that council's area. Mutual arrangements can be made between local authorities, but a certain spirit of non cooperative parochialism still survives in public assistance as a relic of the curious law of settlement and removal which various representative committees of the London County Council recommend should now be repealed. If an excursion into ancient history be permissible in the holiday season, the problem must be viewed against its mediæval background.

From time immemorial everyone in England has legally belonged to some particular parish—the parish of his "settlement." Thus from the beginning it arose that the local inhabitant who had to contribute to the relief of his indigent fellow parishioners was naturally anxious to limit his liabilities. For this and other reasons it befell that the poor were penned within their own parishes. If the labourer was found outside, he and his family were liable to be removed in custody to what was believed to be their proper parish where possibly their "settlement" would be still further disputed on arrival. Under statutes of Edward VI (partly aimed at the wandering monks dislodged from the suppressed monasteries) all aged, impotent, and lame persons who were beggars could be removed from any parish where they had not acquired a domicile by birth or three years' residence. An Elizabethan amendment enabled them to be hunted home even if they did not beg. In 1662 a further widening was enacted. Henceforth, for a century and more, any stranger who entered a parish to take up work or for any other laudable purpose might be removed in custody with his wife and family in circumstances of severe hardship, however good his character. If he could give security that he would never become chargeable to his adopted parish, or if he rented property of a certain value, he was safe; otherwise he lived under threat of exile. ADAM SMITH went so far as to say that almost every poor man of 40 would at some time have suffered from this ill-considered law of settlement This was an exaggeration, but there was at any rate incessant inter-parochial litigation and enterprising workmen could not move freely to get work. The statute of 1662 was not mitigated till 1795 when Parliament decided that, except for the rogue and vagabond and the unmarried mother, nobody should in future be removed unless he or she actually became chargeable to the poor rate and was not too sick or infirm to travel Other ameliorations were slowly added but even now the old law of settlement and removal is not yet dead. To-day a person acquires a settlement by birth, apprenticeship, ownership of property, payment of rates or three years' residence, or by derivation from husband or parent; he can become "irremovable" by one year's residence. But, if he is removable, and if he receives assistance outside his place of settlement, the cost can be thrown on the local authority of his place of settlement and to that place he can be removed on an order of the justices The substitution of the county and the county borough for the parish (as the poor-law area and the place of settlement) has diminished minor local complications; on the other hand, individuals and families now travel about more freely than they did.

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[1] See THE LANCET, 1930, i, 1351; 193[illegible] i, [illegible] 1932, ii, 187.

[2] Amer. Jour. of Hyg., November, 1934, p. [illegible]

All this is not a mere matter of ancient history. Lately the London County Council sought to prove that a woman patient in one of its mental hospitals was in fact "settled" in a county borough in South Wales which ought to pay for her future maintenance An order was obtained against the Welsh authority, but a hitch occurred because doubts about the continuity of her residence in that borough between 1891 and 1925 made it possible that her real settlement was in a Welsh county An order was obtained against the county, but further inquiry showed that her settlement was in the county borough after all. The county borough appealed to the London sessions whither 20 witnesses were brought from Wales by one side or the other In the end the appellant authority was adjudged chargeable after substantial costs had been incurred. Is it surprising that local authorities should consider that this antiquated law of settlement and removal, which has no application outside poor relief, is ripe for repeal? Actual residence at the moment when the need arises is the criterion for the purposes of the Mental Deficiency Acts, public health hospital service, tuberculosis treatment, education and unemployment insurance transitional payments. Might not the same test apply to poor relief? It is nowadays the sick, aged, and infirm who are "removed" under the law; they have often little connexion with their original "place of settlement," and for old people it is no small hardship to be ordered away from their surroundings and possibly separated thereby from their friends and their relations. The recent report of the L.C.C. committees refers to two other matters incidental to the proposed repeal of the ancient law. Section 80 of the Poor Law Act of 1930 deals with the recovery of the cost of relief by reason of accident or illness in the case of a person who has a fixed abode in a county or county borough but who happens to be temporarily in some other county or county borough which is not his place of settlement Here there is no enforced removal and not much risk of litigation. The object of the section is financial, but its operation involves administrative expense and complicated book-keeping The report recommends that Section 80 should also be repealed. Secondly there is a question (arising out of Section 5 of the Local Government Act of 1929) of the "settlement" of patients treated in appropriated hospitals In London it is the practice that inhabitants of the county who do not appear to be "removable" are treated on admission as "municipal patients"; their assistance is not afforded under the poor-law. But on admission of a non-inhabitant, or of an inhabitant who appears to be "removable," arrangements are made to classify him as a poor-law patient with a view to inquiry as to his place of settlement and the possible recovery of the cost of his maintenance from the appropriate local authority. Here, therefore, and also in the mental hospitals service, there are consequential difficulties requiring adjustment if the old principle of settlement and removal is abolished. The advocates of such abolition are not unaware that there is material for argument on the other side. They can truly say, however, that this is no time for preserving restrictions upon the movement of able-bodied unemployed, and that the cumbrous enactments of settlement and removal, with their history of compulsion and hardship, ought to have no place in an amended poor-law.

ON another page will be found a report of the discussion in both Houses of Parliament on the new scales of relief proposed by the Unemployment Assistance Board which are to come into force on March 1st, 1935 As Sir Francis Fremantle points out, the analysis of the various items in the poor family's budget which underlies the grading of the scales is a method acceptable in itself and capable of great development in the future Whatever the adequacy of the proposed scales—and there was sharp divergence of opinion on the point—the attempt to base them on scientific inquiry opens a new chapter of social legislation in this country.

ANNOTATIONS

DRUGS AND THE EPILEPTIC SUBJECT

THE part played by sedative drugs in the production of mental deterioration or mental abnormality in epileptics is difficult to assess, although this is a matter of practical importance to all practitioners of medicine It is known that luminal in moderate doses occasionally produces irritability, which may, though rarely, amount to something approaching mania, more often, and in larger doses, the drug may cause sleepiness and a slowing down of the mental functions If luminal or bromide is given over long periods does it, as many of the public appear to believe, inflict permanent mental injury on the patients ? Dr J Fetterman and Miss Margaret Barnes,[1] of Cleveland, have made some serial studies of the intelligence of epileptic patients, and though their contribution, as a whole, is not very convincing on the question of sedative drugs they are interesting They claim to show that there is no fall at all, or only a negligible fall, in the intelligence quotients of patients over a period of many years during which they have been taking sedatives regularly The position with regard to bromide has been dealt with rather fully in two recent papers Dr J C Sharpe,[2] of Baltimore, gives an alarming picture of acute bromide intoxication in five men and five women The common symptoms appear to be difficulty in speech and swallowing, a coated tongue, coarse tremors, and difficulty in walking, but the neurological signs are very varied and the mental condition may be that of almost any psychosis Diagnosis can only be made by urine and blood examination, but treatment, by stopping the drug and administering chlorides, is always efficacious and cure is rapid One of the patients is said to have taken 180 g of bromide a day for three weeks, and another about 450 g a day for six weeks, unfortunately we are given no idea of the quantities taken in the other eight cases, but presumably they were quite outside the ordinary therapeutic zone None of Dr Sharpe's patients was epileptic but there is a good deal of evidence that some of them were mentally abnormal before they started taking bromides. The practitioner may be reassured by a very interesting paper by Dr Paskind, of Chicago,[3] who has studied 54 cases of epilepsy, seen in private practice, who have been taking bromide steadily for periods of from 1 to 17 years The usual daily dose was 60 g, in only two cases was it less than 45, and in five it was as high as 90 In three cases only was any mental deterioration noticed All the other patients were able to retain their employment during the long period of observation, many of them being professional men and women The percentage of deterioration Dr Paskind believes is no greater than that which would have occurred without any medication Without fear of doing the epileptic patient any mental harm, therefore, he may receive 60 g of bromide a day, a dose which in England would be regarded nowadays as large But if this is correct some explanation must be found of the grave and frequent warnings given by high medical authorities concerning the serious effects of bromide on the patient's mind Dr Paskind explains them by the failure to adjust the dosage to the patient's tolerance Dosage in excess of the tolerance will produce intoxication with its typical mental and physical picture—remove the bromide, he says, and the signs of intoxication will disappear This intoxication differs from deterioration, which is chronic and ineradicable Moreover, Dr Paskind holds that the whole bromide question has been obscured by reports on epileptic patients in institutions, most of whom were destined to deteriorate in any case, and in whom periodic behaviour disturbances were often quite erroneously attributed to the drug It is certainly wise to be cautious in crediting epileptics generally with psychological deviations from the normal that have been observed only in institutional patients

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[1] Archives of Neurology and Psychiatry, Oct, 1934, 32, 797
[2] J A M A, May 5th, 1934, p 1462
[3] Ibid, July 14th, 1934, p 100

MALNUTRITION IN VIENNA

ACTING on the report of the Conference held in Berlin in December, 1932,[1] an investigation of the effects of the economic depression on the population of Vienna has been made by A Götzl, W Kornfeld, and E Nobel[2] Their main inquiry was directed to the circumstances and physical condition of 558 families of the unemployed and 152 families in which the head of the family was in work These two groups did not differ appreciably in their housing or in such factors as household cleanliness, but the income of those at work was some two and a half times that in the possession of the out of work (including public and private assistance) and the heaviest charge on the budget of the latter was the debts they had acquired When information on these social particulars had been obtained the members of the families submitted themselves to medical examination, and a detailed comparison is made of their physical status In both height and weight the males in the unemployed group are found to be uniformly below the level of the employed, with the females, however, no significant difference is apparent before age 20 is reached when the adults in the unemployed group are inferior to those in the employed group It seems difficult to attribute differences in height of adults to the consequences of unemployment, and the authors recognise that some form of unpremeditated selection might be responsible—e g, there might be a greater frequency of unemployment in families that are already "psychophysically impaired" They however, think it probable that at least part of the difference must be regarded as a result of unemployment, that "bad living conditions and also an unfavourable mental condition have contributed to the development of a stoop" If this belief be accepted the differences in weight may likewise be accepted as evidence of malnutrition, but if the diminished height is merely the result of an undetermined selective force, then weight (in view of the high correlation between the two measurements) must be similarly affected It may be noted that the present series of figures in comparison with those collected in Vienna in 1920 and 1923 by Nobel and Pirquet[3] show both for males and females from age 6 to age 20 a uniform superiority both in height and weight There is therefore, if the samples of the population are really equivalent, evidence of improvement between these dates.

The authors also compare their employed and unemployed groups by means of Pirquet's Pelidisi index, but no significant differences between them are thus made apparent On the other hand a second investigation of children and adolescents in e[illegible] group of which the father or other breadwinner was unemployed and the other employed, showed a larger proportion of children with a high index in the employed group while more children in this group had a height and weight above the measurements taken as normal In this comparison the children of the unemployed show to distinct disadvantage. Differences to the disadvantage of the families of unemployed persons were also noted in the blood-content of the skin and visible mucous membranes Generally, therefore, the authors conclude that a defective physical development of unemployed persons' children is demonstrated. Their paper does not make easy reading but at least the 21 tables of figures must be very carefully considered by those interested to satisfy themselves upon this interpretation.

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[1] League of Nations Quart Bull Hlth Organis, 1933, 2, 1
[2] Ibid, 1934, 3, 2
[3] Z f Kinderheilk 1923, [illegible]

OXYGEN CONSUMPTION AND NITROGEN METABOLISM

WE are familiar with the fact that protein food, in virtue of its "specific dynamic action," increases the general metabolic rate, and we regard this effect as almost inevitable. No matter how urgent the requirements of the tissues are for nitrogen, the amino-acids must run the gauntlet of the portal circulation immediately they are absorbed, and in the process many of them are de-aminised and their nitrogen is lost as urea. It is true that the remainder of the molecule may be converted into carbohydrate and stored, but for some reason the chemical changes brought about by the liver are accompanied by a general increase in the oxygen consumption of the body, and the dissipation of energy as heat We do not often think of the amino-acids produced by the wear and tear of our own tissues as exerting a specific action on the metabolism, but they do so, and the fact is rendered significant by the observations of Dr. C. W. Baldridge and his associates,[1] of Iowa City, on blood destruction and regeneration They find that in the treatment of pernicious anæmia there is storage of nitrogen during erythropoiesis; that is, less nitrogen is excreted in the urine and fæces than taken in by the mouth This storage is accompanied by a definite fall in the basal metabolic rate of the patients—the reverse aspect of specific dynamic action. Moreover, in cases of leukæmia under X ray treatment, and of polycythæmia vera during phenylhydrazine administration, there is great destruction of blood-cells, and the amount of nitrogen lost in the excreta exceeds that ingested in the food Here there is an increase in the basal metabolic rate of the patients Blood destruction and regeneration experimentally produced in dogs appear to have the same effects on gaseous metabolism as in man. An experiment performed with phlorhizin is interesting This substance, administered to dogs, lowers the renal threshold to glucose which is therefore turned out in the urine, the blood-sugar level becoming in consequence reduced, the carbohydrate stores are drawn upon and finally exhausted The animal is reduced to producing carbohydrate from the protein of his food or tissues, and naturally the endogenous katabolism of protein is much increased. Baldridge has followed the recovery from phlorhizin diabetes, presumably accompanied by restoration of tissue, and finds nitrogen storage with lowered metabolism, as in human patients during blood regeneration In general all his results fit in with the statement that oxygen consumption varies with the endogenous protein metabolism This raises many interesting physiological issues, among which is that of temperature regulation. We may regard heat production as determined in the main by a general level of metabolism in the tissues, probably controlled by autonomic and endocrine influences, and as adjusted to the needs of the moment by variations in the state of contraction of the muscles. Into this scheme we may have to introduce another factor in the shape of the specific dynamic action of the waste tissue protein, or its opposite if tissue is being regenerated.

NATIONAL BIRTH CONTROL ASSOCIATION

THIS association, with which the Birth Control Investigation Committee is incorporated, has published its annual report this month, and is able to show evidence of activity and progress The issue by the Ministry of Health in May of Circular 1408 has given an impetus and direction to the work of the association. Under this circular it is now possible for local authorities to advise at their clinics every woman for whom pregnancy is medically detrimental, including cases of grave malnutrition as well as of specific disease What is or is not medically detrimental will be decided by the doctor in charge of the clinic, and this is a distinct advance The branches of the association now number 19 and it is desired to appoint new organisers to attack new areas and form new branches The work of the Birth Control Investigation Committee has proceeded satisfactorily during the year and grants have been received by it from the Medical Research Council and from the Eugenics Society which have been a great encouragement

HEALTH AND FUTURE OF THE NORWEGIAN GIPSY

A RECENT study by Dr E Gisholt[1] suggests that modern conditions of life, in Norway at any rate, may be exerting such a profound influence on the gipsy that his future as such, distinct from the rest of the community in which he lives, seem problematical From far back in European history the gipsies are referred to as a trouble to the authorities in Norway, and their handling has not been simplified by the later infusion of more foreign elements, such as an invasion by gipsies from India and other sources such as occurred after the 30-year war The Norwegian gipsies of to-day are composed of different elements, with an aristocracy—of a kind The policy of the authorities in the past towards this vagrant population may be described as intermittently punitive, defensive rather than paternal But in 1897 a more constructive and humane attitude found expression in the creation of the Gipsy Mission which has since sought a solution of the problem by tackling it in infancy, without wasting its energies on the adult. The Mission has organised homes to which gipsy children over the age of 4 years are not, as a rule, admitted, the extreme age-limit being 6 years The children, accordingly, start a new life before they have acquired an incurable taste for the vagrant life of their parents. Living in these homes till they are 11 or 12 years old, the children enjoy the benefits of a religious education and physically and psychically healthy surroundings Experience has shown that about 75 per cent become self-supporting without adopting a vagrant life. As medical officer to one of these homes, Dr Gisholt has made a special study of the bodily and mental health of its inmates It might have been supposed that a gipsy's life is so airy that rickets would be rare, but a third of the children examined showed signs of this disease—the result, no doubt, of the defective artificial feeding to which they have been subjected, and of a sunless and airless sojourn in the cabins of gipsy boats. Enuresis was also common, a sign of a neuropathic or psychopathic degeneration. Intelligence tests disproved the common belief that gipsies are exceptionally gifted mentally; a certain low grade nimbleness of wit is all that they could be credited with as a class. In the nineties of last century it is stated that there were some 4000 gipsies in Norway. By 1927 this figure had been halved, and at the present time there are only some 1800 gipsies living as such. It would, therefore, seem that the day is not far distant when the rest of the gipsy fraternity will have been absorbed by the general population of the country.

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[1] Arch Internal Med , October, 1934, p 517.

[1] Tidsskrift for Den Norske Laegeforening Oct 1st, 1934, p 961

VERTEBRAL ANGIOMATA

As a subject of pathological interest angioma of the spinal column seems to have been recognised by Virchow, but the clinical recognition and description of these tumours dates only from 1926. In a general review of their characteristics J. A. Lièvre[1] states that the early symptoms can usually be traced back to adolescence or to early adult life, but the disease progresses so slowly that it may take 20 or 30 years to cause death. The symptoms are almost entirely nervous, and are due to backward growth of the tumour pressing on the spinal cord or on the spinal roots. Even in the early stages these symptoms may be definite enough to allow of their reference to a vertebral cause, but the diagnosis of angioma can be made only by radiological examination. The X ray picture is quite characteristic. It shows the disease, as a rule, confined to one vertebral body; occasionally vertebræ at a distance from one another may be affected, but this is rare. The intervertebral spaces show no encroachment, and the discs are normal. The affected vertebra varies in shape; its height is neither increased nor decreased, and the upper and lower limits are definite. There is no collapse such as is seen in secondary deposits of carcinoma. Little increase in breadth may be noted, but more typically the vertebral body is considerably swollen laterally, giving an ovoid outline in the antero posterior radiogram. The texture of the bone is finely porous, showing an irregular network of clear spaces and darker trabeculæ. The pedicles, laminæ, and spine appear normal.

There seem to be two main clinical types of the disease. In the first, or paralytic type, the patient suffers from a steadily progressive paraplegia, with all the usual complications, which eventually prove fatal. There is no pain and therefore (one must suppose) no pressure on the dorsal roots; this absence of pain is, of course, in conspicuous contrast to the paraplegia of secondary carcinomatous deposits in the spine. The case described by Dr Mary Lacey and Dr Seymour Smith in our issue of Nov 24th was an example of vertebral angioma of this type with a history of 26 years' complete paraplegia. The case now described by Lièvre under his care is an example of the other clinical type characterised by severe pain radiating along the distribution of the dorsal roots. The pain started at the age of seven and was sciatic in distribution. It was temporarily relieved by immobilising the spine in a celluloid jacket and by keeping the patient lying down, but after 21 months it increased until the slightest movement provoked extreme pain. The first lumbar vertebra was affected, and percussion of this vertebra also produced the pain. Records of other cases collected by Lièvre show that the pain is sometimes referred directly to the diseased vertebra and in others radiates. The clinical type is determined, at least in part, by the anatomical form of the tumour. Where it grows backwards so as to reduce the lumen of the vertebral canal, pressure paraplegia results. In other cases it irritates the nerve roots and causes pain. The differential diagnosis from other vertebral lesions causing paralytic or pressure symptoms depends almost wholly on the radiogram. No other disease gives quite the "porous vertebra" picture, syphilis providing the nearest approach to it.

Vertebral angioma is a very slowly progressive disease. Treatment resolves itself into deciding whether, at the particular stage when it is recognised, any interference is justified or necessary. Surgical removal, although it has been attempted, seems to be altogether too formidable a procedure; hæmorrhage is the main danger. Relief of pain is the chief indication for treatment, and here radiotherapy seems to be remarkably successful, although it has no effect on paraplegia—or indeed upon the radiographic appearances, which often show no correspondence with the symptoms.

SAVING THE PEDESTRIAN

In an address to the British Science Guild on Dec 10th Mr Mervyn O'Gorman pleaded for a new science. It is to collect and interpret the data of road problems, to measure traffic flow, and somehow to diminish the ratio of fatalities to running miles. The Royal Society would be invited to nominate as members of a research committee (paid by Government and reporting directly to the First Lord of the Treasury uncontrolled by the Ministry of Transport) experts in physics, mechanics, mathematics, chemistry, geology, metallurgy, statistics, physiology, and psychology. Upon this new science no name has yet been conferred. May we suggest the title of pedestriantics? It is clear that Mr O'Gorman's best hopes are centred on the psychologist's analysis of the motives and reactions of foot passengers. No one, he says, has any legal right to use the highway except for the single purpose of innocuous passage. Yet here are these wayward creatures insisting upon shop-gazing, chattering to their friends, admiring and photographing the street architecture, singing and preaching, standing in queues, begging, airing dogs and children, playing ball games or taking betting slips. Seen from above, by the archangel peeping over his cloud or the traffic director looking down from his autogiro, pedestrians are the most numerous and fragile of traffic units—up-ended sticks whose vertical bodies give no index of their intended direction unless perchance they are pushing a perambulator. In default of a law to compel them to move in one direction on one side of the carriage way, wheeled traffic has to force them to decide their line of motion in a manner which in the past has created not a little ill feeling. The psychologists will have to take into account a certain John Bull refusal to be shepherded. Just as the bicyclists object to wear white tails like rabbits even to save their lives at night, so the pedestrian will resent a decree to keep to the left. He will keep to the right where he can face his dangers. Statistics of traffic flow and running miles mean little to him. However lavishly the country may be adorned with orange globes, he will not abandon his independence merely to give fast-moving vehicles a longer ribbon of road surface. When Parliament permitted the Road Traffic Act to produce a voluntary Highway Code it was careful to let the latter remain hortatory rather than mandatory. If Parliament now felt strong enough to order the pedestrian to keep to the left, magistrates might still deal very leniently with a breach of the law. But by all means let us have the proposed inquiry in addition to the investigations already conducted by the Ministry of Transport. When psychologists have thoroughly examined the pedestrian in their test-tubes, it may be possible to save him in spite of himself.

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[1] Presse méd 1934, xlii, 13 1

HEALTH OF THE ROYAL AIR FORCE FOR 1933[1]

Last year there were 30,868 men in the Royal Air Force, a decrease of about 1000. Sickness amounted to 53 per 1000 of strength, counting only admissions to hospital and sick quarters, or 76 per 1000 including all absences from duty. Disease was responsible for 82 per cent. of the total sickness, injuries for only the remaining 18 per cent.; the fairly constant relation between disease and injury noticed in previous years is thus maintained. Deaths in the R A F. numbered 3·7 per 1000 of strength against 3·6 in the previous year and 4·4 in the five-year average. Of the deaths from disease 5 were due to pneumonia, 4 to syncope, 3 to tuberculosis, and 1 to each of 20 other specified causes. Of the 51 deaths from injury 16 occurred as a result of motor accidents when off duty. Cases of injury or illness are greatly more frequent among the younger men, especially at home; influenza particularly attacked those almost boys It has now been decided to Schick and Dick test all new entrants and protectively to inoculate all non-immunes This was begun in September, 1933, and so far no case of scarlet fever or diphtheria has appeared among that entry Much attention has been given to the need for and the use of oxygen in high flying and parachuting, as well as to the methods for warning a pilot when he needs oxygen. A new study of the effort syndrome has led to the recording in all cases of the rate standing for "the first five-seconds period," which is now regarded as a more reliable guide than "the lowest steady rate" of former years The diet of apprentices is being studied with a view to improvement. Catering in general must have been done with great care as the only outbreak of food poisoning mentioned in the report is one of six slight cases in Iraq. Aeroplanes have increasingly been used for transport of the sick; in the Persian Gulf naval sick have been thus brought to hospital at Basra We note that the R A F. gave medical attention to Assyrian refugees in concentration camps

PAROXYSMAL HYPERTENSION

A recent issue of a Paris journal[2] is devoted almost exclusively to paroxysmal hypertension According to Donzelot, the condition may be divided into three groups (1) hypertensive paroxysms superimposed upon a permanent hypertension; (2) hypertensive paroxysms associated with certain diseases (e.g., lead poisoning, eclampsia); and (3) paroxysmal hypertension due to a chromaffin tumour. Of the last-named, a number of cases have received notice in these columns during the past year,[3] and a very good account of the clinical features was given by Prof. de Wesselow in his second Croonian lecture.[4] It seems likely that in this type of case hypersecretion of adrenaline is the exciting cause of the paroxysms, but in the other two groups the cause is more obscure. Several factors, humoral and nervous, come into question, and it is hard to assess the relative importance of each. In this publication a useful summary of the different theories will be found, with descriptions of several illustrative cases and a number of references.

THE CASKET LETTERS[1]

We reviewed Sir George Turner's defence of Mary Queen of Scots in The Lancet some 18 months ago, the second edition appears this week, and in it there is much new matter. The Casket Letters are now given in full in the different languages side by side, while the analysis and criticisms of eighteenth century authors have been enlarged and added to Undoubtedly, as Sir George suggests in his preface, many historical facts in a lurid and complicated story have come down unquestioned, to be detected later as not facts at all, while the literature dealing with Mary Queen of Scots has always been influenced by religious or political bias, or by both Sir George has made an elaborate inquiry into Mary Stuart's innocence or guilt. He started his investigations with an open mind and has come round to the firm belief in Mary's innocence, and the evidence on which this belief is founded he gives with great completeness The story is a terrible and fascinating one, and its medical implications are frequent. The physical and mental make-up of the various characters in the drama undoubtedly influenced the course of political events as well as the actual episodes; once again we see what light pathology may shed upon history.

INTERNATIONAL UNION FOR COMBATING CANCER

This Union is taking practical shape. Founded last March in Paris its main objects are to form a link between organisations concerned in the study of cancer, to combat charlatanism, and to propose criteria for a uniform system of international records To attain these things it is proposed to organise international congresses and to issue occasional bulletins No less than 32 countries were represented at this preparatory conference, when it was decided to ask each country to nominate two delegates to meet annually as the governing body of the Union A meeting for the purpose of electing these two national delegates was held in London on Dec 13th and was attended by representatives of all the organisations proposing to join the International Union, together with the original British delegates to the preparatory conference—viz, Lieut.-Colonel A B Smallman (Ministry of Health), Mr. Richard Davis (British Empire Cancer Campaign), Dr. W Cramer (Imperial Cancer Research Fund), Mr. Sampson Handley (Middlesex Hospital), and Mr Cecil Rowntree (Cancer Hospital). At this meeting Mr Rowntree and Dr. Cramer were elected to represent Great Britain.

A LONG INNINGS

A letter, not exactly intended for publication, reaches us from Mr. Percival Turner; the gist of it will appeal to many of our readers who may have availed themselves of his services as a medical agent Mr. Turner attains his sixtieth year of business activity at the close of 1934, and in his letter he desires to express gratitude to the medical profession for their support during this long period, a sentiment which is quite naturally associated with the business statement that the Agency is being carried on, suitably manned, for the continuation of the work

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[1] Report on the Health of the Royal Air Force for the year 1933 H.M Stationery Office 1s 6d

[2] Bull et Mém Soc méd hôp de Paris, 1934, No 31

[3] The Lancet, 1933, ii, 1382, 1934, i, 665, 1934, ii, 630, 714, 1130. [4] Ibid, 1934, ii, 636.

[1] Mary Stuart Forgotten Forgeries Revised edition by Sir George Turner, K B E, C B, F R C S Eng. London Rick and Cowan Ltd 1934 Pp 456. 6s.

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXXIII.—PROGNOSIS IN PUERPERAL SEPSIS

When a rise in the temperature occurs in a woman in the puerperium some form of infection is rightly suspected. The anxiety then is centred on what form the infection is going to take.

Acute endometritis, or local uterine sepsis, and septicæmia are the two types of infection that are most often seen. That the prognosis is extremely good in the former and equally bad in the latter is so well known as to require no emphasis. Therefore the problem that presents itself is an early and accurate diagnosis.

LOCAL UTERINE SEPSIS

The majority of cases of acute puerperal endometritis possess a clinical picture that is constant, and no doubt exists as to the diagnosis. The patient is well in herself, she sleeps and eats well and makes no complaint unless it is of slight discomfort in the lower abdomen. The temperature is raised to 99° and 101° F and the pulse rate is rarely above 100 at any time in the day. The tongue is moist. The lochia are offensive and the uterus involutes slowly and is tender on palpation. When this state of affairs exists it is safe to prognose a rapid recovery to health, without a long illness, though in a number of these patients the condition of chronic endometritis will supervene. Chronic endometritis may be expected especially in those patients in whom the *original* acute infection is known to be due to the *retention of* membrane or of a small portion of placenta.

However, in a not inconsiderable minority of patients who suffer from acute puerperal endometritis the degree of infection and the accompanying clinical picture is much more severe than the typical text-book description that has been outlined above. Thus the condition may become evident on the first or second day of the puerperium and the rise in the temperature may be so severe as to be accompanied by a rigor. The pulse rate, too, may reach 120 or more per minute and remain at about that level throughout the 24 hours. Inability to sleep, a dry tongue, and loss of appetite may be present. These symptoms most certainly give rise to great anxiety. But if in addition there is present a bulky, tender, subinvoluted uterus and a profuse offensive lochia, *the infection* is localised and the prognosis correspondingly good. A lengthy illness and prolonged period of convalescence need not be expected, and in the absence of additional symptoms a rapid return to normal is usual. Such cases are not cases of undiagnosed septicæmia. The blood culture is persistently negative and recovery as a rule is rapid.

Nevertheless, the persistence of even a slight degree of pyrexia and of a pulse rate that continues in the region of 96 to 108, whether it follows the mildest or most acute attack of puerperal endometritis, must postpone a really optimistic outlook. This failure completely to settle probably signifies a condition of thrombo-phlebitis in the large venous sinuses in the uterus, and, in the presence of undoubted tenderness in the lateral vaginal fornices, of extension of the inflammation to the pelvic veins. Femoral thrombosis may ensue. Sometimes the infection spreads along, and persists in, the Fallopian tubes, giving rise to pelvic peritonitis or salpingitis. This condition will result in a long period of convalescence, complicated perhaps by laparotomy.

SEPTICÆMIA

A positive blood culture signifies a blood-stream infection; on the other hand, a single negative result is of little value. The mortality-rate from puerperal septicæmia has been variously estimated to be from 4 per cent. *to 80 per cent.* *Allowing for* a number of undiagnosed cases the mortality rate can probably be taken as one in two. It is usually stated that the height of the temperature is of less importance than a pulse rate that is persistently rapid. But a pulse-rate of 120 or more is to be expected in septicæmia. Likewise the patient is as a rule sleepless. Repeated and severe rigors are unusual and are of grave significance. In the condition of septicæmia the infection may become apparent in various parts of the body. Thus at the onset of pulmonary complications the gravest prognosis should be given. In a few cases peritonitis may develop. If vomiting, diarrhœa, and abdominal distension, without much abdominal pain at first, are noticed a fatal result may be expected.

The symptoms of vomiting, diarrhœa, abdominal distension, together with evidence of free fluid in the peritoneal cavity, suggest, as has been mentioned above, the diagnosis of streptococcal general peritonitis. Uncomplicated by septicæmia the prognosis is by no means fatal and probably recovery takes place in about half the cases. The treatment of this condition is to make a midline subumbilical incision and to drain the pouch of Douglas and both renal pouches by means of long pliable glove rubber and gauze wick drains. *The patient must be* disturbed as little as possible. Nitrous oxide and oxygen is the anæsthetic of choice and the small operation, which takes only a few minutes to perform, is best done without moving the patient from her bed. The early diagnosis and treatment of this condition greatly improve the prognosis. Early drainage appears to lessen the severity of the paralytic ileus and the consequent exhausting pain experienced by the patient.

Should jaundice develop the end will be rapid. On the other hand, should the infection become localised in joints or bones, although a lengthy illness is certain, a more favourable outlook exists as regards the life of the patient. A moderate degree of leucocytosis should be regarded as favourable, but is seldom seen in cases of septicæmia.

A less favourable prognosis should always be made when the infection has followed any operative procedure. Such an event will almost inevitably have caused damage to the maternal tissues with a lowering of the local resistance. Cæsarean section is interesting in this respect. It is of importance to note that should an infection occur after this operation the prognosis is bad. In other words, a mild and relatively harmless localised infection is far less likely to be anticipated after a Cæsarean section. The appearance of the signs and symptoms of sepsis at such a time usually herald the onset of such conditions as septicæmia or general peritonitis.

OTHER FACTORS

Other factors which might be expected to influence the prognosis of puerperal sepsis are the condition of the patient at the end of labour, the bacteriological findings, and the time at which treatment is started. A worse prognosis is to be expected in a woman who is weakened by loss of blood, a severe toxæmia of pregnancy, or some intercurrent disease.

The bacteriological examination of the lochia must be made from the contents of the uterus and not from those of the vagina, and from whatever source the material is obtained, anaerobic as well as aerobic cultures must be made. Should the organism in the lochia be *B. coli* staphylococci, enterococci, or diphtheroids in pure or mixed culture it is probable that the body will localise the infection and the prognosis as a result will be good On the other hand a pure growth of hæmolytic streptococci from the lochia is of serious import irrespective of the findings of an examination of the blood Localisation in the uterus of an infection by this organism is unlikely and the prognosis will vary with the extent and direction of the spread Likewise the finding of a hæmolytic streptococcus in the blood stream in a case of puerperal sepsis is of grave significance. It seems that a less gloomy prognosis can be offered if the organism is found only on anaerobic culture

EFFECT OF TREATMENT

The treatment of localised uterine sepsis usually amounts to no more than rest in bed, as the vast majority of cases recover quickly In the severe types of acute endometritis the prognosis is improved, not only by a quicker recovery but also as regards the lessened risk of complications, by the early use of intra-uterine glycerin The specific treatment of streptococcal septicæmia covers a large field Many methods have been suggested in the past few years. In every instance the recorded success of any one method has failed to stand the test of time and to uphold its value Occasionally the use of anti-scarlatinal serum in large doses seems to have been of value With this possible exception there is no one specific remedy that appears to alter the prognosis however early it is employed.

THE CHANCES OF A SUBSEQUENT PREGNANCY

Acute local infection of the uterus does not seem to influence the fertility of the woman This of course is not so when the infection involves the Fallopian tubes or spreads to the peritoneum Should salpingitis or peritonitis be present sterility will probably result Chronic endometritis, uncomplicated by chronic salpingitis, on the other hand, does not appear to be nearly so potent a cause of sterility as might be expected. The fact that pregnancy has followed the thorough curettage of an unhealthy endometrium does suggest that occasionally endometritis does cause sterility. A recurrence of sepsis in any succeeding pregnancy need not be feared Following an infection in the puerperium, no matter how severe, such recurrence is unlikely, except after (1) an infective thrombo-phlebitis which is likely to recur in a subsequent puerperium and should be carefully watched for, (2) a *B coli* infection of the urinary tract (Dugald Baird), *B coli* infection is, however, generally a cause of puerperal pyrexia rather than of puerperal sepsis The streptococcus, if it does remain dormant in the tissues, awaiting the stimulus of another pregnancy to awaken it to further activity, appears to do so only in the event of salpingitis or peritonitis, and as has already been said, these conditions usually result in sterility A streptococcal infection of the endometrium seldom persists as such; the infection soon becomes mixed and the streptococcus disappears Even if it persists puerperal sepsis need not occur for it will probably not be pathogenic to the woman

In conclusion, an accurate prognosis can seldom be made during the first three or four days of the pyrexia period A case whose clinical features lead to an almost certain diagnosis of streptococcal septicæmia with a grave outlook has frequently turned out to be a severe *B coli* infection of the urinary tract and placental site, a condition the outlook of which is relatively excellent.

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PANEL AND CONTRACT PRACTICE

AN ASPECT OF "HOSPITAL ABUSE"

It is often stated that panel doctors send their serious cases to hospitals, with the implication that they are shifting responsibility from a service which is paid for doing this work to hospitals which are not paid for doing it That is an easy accusation to make —in some areas there may be reasonable foundation in fact—but the truth about the whole position is not easy to arrive at. An analysis of the situation viewed from the standpoints of the insured person, his employer, the insurance practitioner, the panel and insurance committee, and the hospital and its staff reveals that many different and some difficult questions are involved

The insured person goes in sickness to the insurance doctor of his choice; he is easy of access, his hours of attendance are known This patient may not have the slightest idea what is the cause of his trouble, if he thinks he has a lump somewhere which ought not to be there he will not be surprised if the doctor tells him he needs an operation In a locality where access to hospital is easy, he will expect to be sent there for the operation and may be surprised if his doctor suggests doing it himself in the consulting-room or at home But rural practitioners undertake more operative work than urban ones and their patients expect it Probably most insured persons would prefer their own doctor to operate if they knew that he laid himself out to do that sort of work. If, however, his own doctor tells him, after adequate examination, that the trouble is such that he would like a hospital opinion about it, or that it is something for which treatment at home is not possible, or that it needs further investigation to determine its nature by methods which can only be employed in hospital, the insured person recognises that his doctor is taking trouble about him, is acting in his interests, and readily consents to take a letter to hospital about his case In the first instance patients often dread being sent to hospital knowing they may have long to wait before seeing a member of the visiting staff They are grateful for any little kindness shown them by nurses, students, or by the consultant himself when they see him, and after the ordeal they are glad to be sent back to their own doctor. If for some reason they have to return to hospital for treatment which cannot be obtained at home they soon begin to find their way about—how to arrive late without losing turn, how to slip in at side entrances—and become reconciled to hospital attendance unless it costs them too much, for they will have to pay for medicines or dressings, for X ray examination, quite apart from the cost of obtaining food whilst away from home They may complain about the cost to the insurance committee, but such complaints are not common, because the patient realises he has been sent to hospital for his own benefit, while the hospital is not making anything out of him And patients who thus become well versed in hospital methods will go direct to hospital with some subsequent illness, hoping to see old friends, without consulting their insurance doctor at all.

The employer comes into the picture both as the man who is paying half the cost of medical benefit and possibly as a subscriber to the hospital If he is the sort that looks after his workpeople he will find out why his employee is away and who is looking after him If he is told that the insurance practitioner's attendance is unsatisfactory he may bring pressure to get the case into the hospital to which he (or his firm) subscribes It is not uncommon for an employer to initiate a complaint to the insurance committee about an insurance doctor's treatment or to allege negligence in the attendance of an employee Employers have an inconvenient habit, based on kindness, of calling in their own medical attendant to attend a servant or employee The inconvenience is that this doctor may without consulting the insurance doctor, send the case to hospital simply because the employer wants him to go there

The insurance practitioner should use the hospital as he would use a consultant for a private patient, not forgetting that there is a consulting service for better-class insured persons with reduced fees, which avoids the fatigue and waiting of the out patient department Either method requires a letter telling the history of the case and treatment so far given, asking for an opinion, and requesting that the case may be sent back with diagnosis and suggestions for further treatment, unless for any reason the patient must be retained in hospital Simply to give the patient a visiting card is hardly courteous to the consultant, and a standard hospital letter is obtainable for the purpose Then the insurance practitioner may use the hospital as a place to send patients requiring such treatment or investigation as cannot be carried out in the surgery or at home e g urgent conditions like obstruction, or chronic conditions like duodenal ulcer But the insurance practitioner is expected to perform all the duties which come within his terms of service Whitlows are frequently sent to hospital, it is so easy to tell a patient that the hospital has more conveniences for doing these things—better nursing, better surroundings—and to give the impression that the patient's welfare is the sole consideration, when the practitioner may only be yielding to the temptation to place trouble on the broad impersonal back of the hospital He may be able to justify a statement that it would require 24 hours to get the assistance of another doctor to give an anesthetic if required and the plea will be accepted, but it is in fact wrong to send small cases to hospital It should not be forgotten that insurance prescriptions cannot be given for dressings or medicines in cases attending hospital, it has been ruled that the doctor can only supply them for patients on his own list whom he is himself attending

The panel committee comes into the picture only to disabuse the public of the notion that insured persons are foisted on the hospital on every possible occasion It holds no brief for the doctor who acts in this way and most committees would be prepared to take disciplinary action if it could be proved that such delegation of duty and responsibility was a regular practice The insurance committee on the other hand is much concerned, as it frequently receives complaints from insured persons as a result of something discovered in hospital or of some criticism of the treatment outside no worse perhaps than the innocent remark 'It is a pity this case did not come in sooner Rarely this committee may have a complaint about the cost of dressings and drugs incurred through attending hospital In the main the abuse of hospitals by insured persons does not often come officially before it

To the hospital another side of the picture is presented, and it is as a rule the house surgeon or house physician who first sees the insured person who comes for treatment This officer should know, if anyone does, whether many small cases are sent by doctors with letters when the doctors might themselves have given the attention, or whether such cases come to the hospital mostly on their own initiative But the house officer must usually lack experience in health insurance matters His duty scarcely goes beyond making certain that patients, whoever they are, see the appropriate member of the honorary staff The hospital consultant is in the best position to deal with hospital abuse if it exists While the casualty case is likely to escape him unless some complication occurs, he does see all the new out-patients with letters from doctors But his course is not easy when the hospital secretary publishes in the annual report the out patient total as evidence of the good work of the year Again the member of the staff may know that the particular practitioner who sent the case up to him would prefer to have it looked after in hospital, and why should he risk offending him? The patient may indicate his wish to try hospital treatment as he was not improving at his own doctor's hands and why should the member of the staff offend the patient, possibly sent by an important subscriber? And last but not least, the consultant's out patient department is the only place where he can follow the results of treatment for any length of time His private cases for the most part he sees only once, he may never know whether he has done them any good or not In the out patient department the difficulty of finance is eliminated and the doctor can study the results of this or that treatment week after week even year after year

The attitude of the hospital authority is largely a matter of finance Insured persons are entitled to certain benefits from their approved societies, many of them are members of the Hospital Saving Association, and this source of remuneration is put against their cost as in patients Only the simplest form of certificate is required—that X, Y was admitted (or discharged) on such and such a date—and this can be given by any hospital officer, it does not need a doctor's signature The hospital authority has tried by various means to get from insurance money the amount expended on drugs and appliances for insured persons One hospital endeavoured to put its dispensary department under contract with the insurance committee for the supply of drugs to insured persons but this was disallowed as the insurance chemist can only charge to the drug fund prescriptions signed by the insurance doctor himself But although financially the insured person may be something of a burden to the hospitals there is no movement on their part for his exclusion

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THE LATE DR CHARLES DUNDEE —Dr Charles Dundee of Ballycarry, a well known medical practitioner in Co Antrim, died on Dec 13th as a result of an accident He was driving himself, and when leaving the Ballycarry dispensary he found his car difficult to start He pushed it a certain distance downhill, endeavoured to board it while it was running but slipped and was pinned to the ground by the car, receiving fatal injuries Dr Dundee leaves two sons members of the medical profession one practising in Ballycarry and the other in Whitehead He himself held the position of dispensary medical officer at Ballycarry for no less than 32 years and was a justice of the peace for the district

SPECIAL ARTICLES

DIETETIC DEFICIENCIES AND SUSCEPTIBILITY TO INFECTION

WITH SPECIAL REFERENCE TO CHILDREN *

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FAMINE and pestilence: by long and ancient usage these two words are linked together, and bring to mind the toll taken by microbial diseases when a people is subjected to severe dietetic deprivation. Famine, it is true, brings in its train many other ordeals as well as lack of food: the manifold trials associated with long treks by great bodies of people, the breakdown of sanitary arrangements, the hardships of excessive heat or cold, all these are familiar to us in the accounts of famine conditions Yet I venture to suggest that pre-eminent among them as a cause of the pestilence is the dietetic factor itself, and that a diet quantitatively or qualitatively inadequate greatly increases susceptibility to infection.

Consider the Russian famine after the late war. Naturally in times of scarcity the food deficiency is not quantitative only; those who cannot get enough to satisfy their hunger eat what they can get, and in different persons and at different times different defects predominate Here are some observations made by a one-time Royal Free Hospital house surgeon[1] working with a relief unit in the Volga region after the war. He states that at one period, presumably in the Volga region, one-third of the population was suffering from typhus In addition, relapsing fever and typhoid were epidemic, and later in 1922 and 1923 there was a pandemic of malignant subtertian malaria with a very large mortality. He gives some figures (taken from official sources) for children who were transported in Red Cross trains from famine areas to Moscow. These, he says, were picked individuals, chosen as being those most likely to survive. Of 24,000 children arriving in Moscow, about 6000, or 25 per cent, were "hospital cases", of these 6000 children 40 per cent. were suffering from skin diseases, 10 per cent. from typhus or typhoid, and 5 per cent. from trachoma Among about 1300 children sent to Leningrad there was a similar incidence of disease. Measles broke out among them, and the mortality of those who developed it was 60 to 80 per cent. Such figures are eloquent both of the increased susceptibility to disease and of its severity among these children. In the winters following the famine scurvy was very widespread, and among children with scurvy there were many cases of cancrum oris During another period bilateral gangrene of the feet and hands (presumably ergotism), together with extensive ulceration of the skin, was common in the children's hospitals.

PRISON DIETS AND DISEASE

So much for the increased incidence and severity of infections in time of famine. A somewhat grim commentary on the effects of an inadequate diet may also be obtained from certain prison statistics Dr J. P. Mitchell,[2] of Uganda, describes the appalling conditions which may occur in prisons, and mentions a certain gaol in which the death-rate rose from 40 per 1000 (or 1 in 25) in 1926, to 280 per 1000 in the first six months of 1928—a seven-fold increase S that in the latter year for every fourth man a sentenc of one year's imprisonment was equivalent to sentence of death Apparently, though overcrowdin and other factors were also at fault, Dr. Mitche attributes this death-rate primarily to dieteti deficiencies and consequent infections. He compare it with the death-rate in English prisons which considered excessive if it rises above 10 per 1000 In another prison where dysentery was prevalent the rate was reduced from 86 per 1000 in 1928 t 34 in 1930, and Dr. Mitchell says that "there wa no doubt that diet was in the main the principa factor" in this improvement.

DEFICIENCES IN BRITISH DIETS

Fortunately among our own British populatio none of us are acquainted with famine conditions but on the other hand an inadequate diet is, wee in week out, the daily lot of very many of our people For those who want proof of this there is the ver valuable piece of work carried out in Aberdeen an Peterhead,[3] which shows that in those towns the die of working-class families is, according to the standard usually accepted, frequently below the minimu needs for health in calories, protein, calcium, phosphorus, and iron—not to mention various vitamin What is true of these areas is presumably also tru of many other cities in the United Kingdom.

Again, consider Corry Mann's[4] observations o schoolboys, aged from 6 to 11, living in a larg institution near London He showed, as you wi remember, that an addition to their diet of a dail ration of one pint of milk produced a marked improvement not only in general health and energy, but als in the rate of growth, both as regards weight an height. The texture of the skin was improved an the incidence of chilblains and pot-belly lessened while the freedom from infection in this group wa striking when compared with the controls Othe food supplements were given to groups of boys wit the object of testing the effect of increasing individua factors in the diet. The supplements tried were sugar, margarine, butter, casein, and watercress None of these produced as good a result as the mil supplement, though with several there was definit improvement in growth and health. Somewha similar observations with similar results[5, 6] have bee carried out on school-children living in their ow homes in Glasgow, Aberdeen, Paisley, Dundee Edinburgh, Peterhead, Belfast, and other districts

Such findings prove that large numbers of school-children are suffering from unsatisfied dietetic needs and also, as one would expect on clinical grounds that the deficiencies are multiple. Corry Mann's schoolboys, for example, showed much improvement when their supply of calories, fat, and fat-soluble vitamins was increased by giving a ration of butter, and improvement also followed upon a daily supplement of watercress; but in neither case was the increase in weight and height as great as that obtained by the blunderbuss addition of milk, which contains most of the constituents of a complete diet

So much for school-children. Spence in Newcastle has recently investigated the health of groups of children aged 1 to 5 He compared the physical condition and incidence of disease in 124 children of professional families and 125 children from very poor areas in the city. Putting it in round figures his records show that pneumonia, chronic or recurrent bronchitis, and measles were over eight times more

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* An address to the London Association of the Medical Women's Federation on Nov 27th

common among the "city" children than among the "professional class" children. No doubt housing conditions and other factors play their part, but can any doubt the important rôle played by diet? 80 per cent of the "city" children had hæmoglobin levels falling between 75 per cent and 50 per cent—i.e., four out of five were definitely anæmic—and this factor alone, as I hope to show, would greatly increase the susceptibility to infection.

I propose now to consider some of the information we have as to the part played by individual dietetic deficiencies in relation to susceptibility to infection. It is, however, very difficult to assess the ill effects of any *one* deficiency, because in human diets deficiencies, when they occur, are usually multiple. Before I begin on this subject, may I emphasise a point which, though frequently forgotten, will I think be accepted by everyone as reasonable—namely, that enough is as good as a feast. If the diet contains enough of any dietetic constituent, no improvement in health is to be expected from giving more. For this reason I propose to say little about the various experimental studies concerned with adding vitamins to diets which were apparently already adequate in that respect.

Let us start by considering two deficiencies that produce well recognised changes in the body, and whose effects must be taken into account by every clinician in this country—that is rickets and anæmia due to iron deficiency.

VITAMIN-D DEFICIENCY

Rickets often develops in babies and young children in this country wherever special precautions are not taken to prevent it. In descriptions of the disease by clinicians, reference is made again and again to the association of respiratory infections with rickets, yet it is not easy to prove that the association is one of cause and effect, though I personally am convinced that it is so. For nearly two years shortly after the war I was working in Vienna as a member of a unit sent out to investigate the problem of rickets. A prophylactic observation was carried out on two groups of babies living under similar hygienic conditions, side by side in the same wards.[7] As events subsequently showed, one of these groups was unprotected from rickets, and these children suffered from a much higher incidence of respiratory infection than the protected group. It is well known that otitis media is often associated with respiratory infection, and among the rachitic children the high incidence of chronic or recurrent attacks of otorrhœa was striking. On the other hand, the incidence of gastro-intestinal infections in the two groups was roughly the same. Unfortunately the diets differed in many respects. The protected group received more milk, less carbohydrate, and had in addition a daily ration of cod liver oil, so that it is not possible to claim that the increased incidence of respiratory infections was the result of vitamin D deficiency and of nothing else. The impossibility of clearly relating cause and effect owing to the complexity of most diets is a constantly recurring difficulty in such investigations. Hence some clinicians remain unconvinced. Prof S. Clausen,[8] for example, in a study of respiratory infections in infancy, reached the conclusion that rickets when considered alone probably does not influence infection, but he does not give any details. Barenberg, Greene and Abramson,[9] workers with the late Prof. Alfred Hess at the Home for Hebrew Infants in New York, where many very valuable dietetic studies have been carried out, compared the incidence of pneumonia among rachitic and non-rachitic children in that institution. They actually found that cases of pneumonia were about four times as numerous in the non-rachitic group. Their cases of rickets were all slight, but even so such a surprising result can, I think, be explained only on the supposition that the non-rachitic children did not provide a suitable control group—and that there was some other big difference of which we are unaware between the conditions of controls and rachitic cases.

So far I have asked you to consider the resistance in rickets to bacterial invasion. The mechanical factor—namely, the soft chest wall and the thoracic deformity of rickets—must also be taken into account. There can be no question that when the chest wall loses its rigidity and gives at every inspiration, prognosis in acute chest infections must be made worse. When, in addition, the intrathoracic capacity is markedly reduced by deformity of the wall, partial collapse of the lung is an additional handicap. Anyone who has watched rachitic infants, say of 5 or 6 months, suffering from pneumonia will have noticed how very rapidly deformity of the chest often develops. Such cases make one realise that even early rickets may severely hamper the young infant in its struggle with a respiratory disease.

Animal experiments to some extent supply the lack of clinical data, for we have records of at least two spontaneous epidemics among rachitic and non-rachitic rats, where apparently the only significant difference in the diet or environment of the two groups was in the vitamin D intake. P. György[10] and his associates record an outbreak of catarrhal infections (Erkältungsepidemie) among rats. Of 41 rachitic rats 39 per cent died, whereas of the 13 control rats, in spite of their ill fated number, not one died. An account of a laboratory epidemic of paratyphoid among rachitic rats has been published by Ficholz and Kreitmair.[11] Out of 24 rachitic rats 20 died, whereas out of 24 non-rachitic rats only 2 died, and the only difference in the diet was that the non-rachitic rats received irradiated ergosterol daily. Such positive evidence is striking and difficult to refute, and many other laboratory workers have also reached the conclusion from their own observations that vitamin D deficiency lowers resistance. Here again, however, opinion is not unanimous. Mellanby,[12] for example, quotes his work on dogs who developed severe rickets. He concludes that dogs suffering from rickets are not especially susceptible to pneumonia, though they do suffer from areas of pulmonary collapse, whereas dogs suffering from both vitamin A deficiency and vitamin D deficiency show a very high incidence of pneumonia. He lays stress on the rôle of vitamin A deficiency in this result, but whatever the separate part played by each vitamin, it is certain that the double deficiency enormously increased the [illegible] must take a prominent place. Iron deficiency is extremely common in infants and young children, though often only slight in degree, and in a series of babies under my observation those which were slightly anæmic from lack of iron showed an increased susceptibility to *all* the common types of infection.[13]

There is much evidence that this type of anæmia is widespread, and is not limited to any one type of diet or to any one part of this country. Hence I think it is safe to claim that by the administration of iron as a routine measure at all welfare centres a very large reduction in infant morbidity could be effected. Those of us who have had the responsibility for the treatment of severely anæmic babies are left with the impression that they go down with every infection which they can manage to catch, and often in severe form. Moreover, a vicious circle may be set up; while the infection is active the anæmia responds but poorly to treatment, and while the anæmia persists the patients' resistance to infection is low. Often these babies suffer from persistent otorrhœa, repeated attacks of bronchitis, nasal discharge, or cervical adenitis, and time and again when the anæmia is finally cured a long-standing infection will entirely disappear. Incidentally this increased susceptibility to infections is accompanied by a diminished rate of gain in weight.

As regards adults, Davidson and his co-workers in Aberdeen find that nearly half the working-class mothers whom they examined were suffering from a nutritional anæmia due primarily to inadequate iron in the diet. Reckoned on the same basis it appears that about one-third of the women bringing up their children to the Queen's Hospital for Children in London are anæmic. Like others who have watched anæmic patients under treatment, the Aberdeen workers comment on the remarkable increase in energy and vigour produced by a rising hæmoglobin level in mothers who had forgotten what health is. Think what this must mean to the welfare of a whole working-class family. If in babies susceptibility to infection and iron deficiency are closely correlated, is it not probable that this also holds true of their mothers, and that iron therapy offers a valuable weapon in the fight against maternal morbidity and mortality?

VITAMIN-C DEFICIENCY

Scurvy in children in London to-day can fairly be called a rare disease, hence vitamin-C deficiency, unlike vitamin-D or iron deficiency, is presumably a comparatively rare factor in lowering resistance to disease among London children. This is undoubtedly largely due to the popular knowledge among mothers of the need of giving fruit and fruit juice. When vitamin-C deficiency *does* occur there is no doubt that resistance to infection is lowered. Since this vitamin is fairly easily destroyed by pasteurisation of milk or by processes used in the preparation of babies' feeds, it happens that when fruit juice is not given to babies vitamin C may be the only deficiency in an otherwise adequate diet. For this reason it is easier to study the syndrome of vitamin-C deficiency, and its relation to infection, than that of most of the other vitamin deficiencies. In reports from abroad concerning large groups of scorbutic infants and young children infections are mentioned as very common. For instance, Bloch[14] in Denmark reports that among 32 children suffering from scurvy there were 30 per cent. with severe infections. Hess,[15] from his extensive observations on cases of scurvy in babies, commented on their increased susceptibility to respiratory infection. Pneumonia, he says, is the most common cause of death, and influenza, nasal diphtheria, otitis, adenitis and pyelitis, as well as furunculosis and ulcers of the skin, are all associated with outbreaks of infantile scurvy. Moreover, he found that an epidemic of influenza in an infant ward precipitated the appearance of symptoms of scurvy in those on the borderline of this deficiency. It has been said that vaccination and the accompanying pyrexia may in the same way precipitate scurvy. An interesting observation was made by Funck[16] in the Sudan. He found that an epidemic of pneumonia which appeared when scurvy was common disappeared when antiscorbutic measures were instituted, suggesting that it was the lowered resistance associated with antiscorbutic deficiency which allowed the spread of the infection. Again Hehir[17] at the seige of Kut noted, like other army surgeons, the "baneful influence on the healing of wounds" exerted by scurvy.

If we turn to laboratory work, we find among those working with scorbutic animals almost unanimous agreement on their susceptibility to infection, both to spontaneous infections and to artificially induced infections.[18]

It is interesting, however, to remember that the various known immunological reactions have not up to now proved helpful in establishing the relations between dietetic deficiencies and susceptibility to disease. Even in the case of scurvy, where there appears to be fairly general agreement that resistance is reduced, the results of such reactions have been conflicting.[18]

VITAMIN-B DEFICIENCY

Let us now consider the vitamin-B complex. Whether or not deficiency in the diet of any of the B-vitamins is common in this country is a debatable point, on which I have no good evidence to offer you, and consequently I will say very little about vitamin-B deficiency. Interesting observations have been published by Bray[19] in 1928 from an island in the Pacific Ocean, showing that when beri beri occurs among babies the incidence of infections is greatly increased. As a result of prophylactic treatment and the widespread administration of a preparation containing the B complex, he found that instead of nearly every baby in the island requiring admission to hospital several times in the year for respiratory and gastro-intestinal infections, it became rare for a baby getting the preparation to need admission at all.

VITAMIN-A DEFICIENCY

We have briefly considered deficiency of vitamins B_1, C, and D from the standpoint of susceptibility to infections. What about vitamin A—often called the anti-infective vitamin? There is no doubt that laboratory rats suffering from a deficiency of vitamin A show a very high rate of infection with pyogenic organisms. It seems that the essential factor leading to these infections is an epithelial change—namely, a proliferation and keratinisation of epithelial layers in various parts of the body, associated with a change in the innervation of the epithelium, as demonstrated by Mellanby. These changes in the epithelium allow the entrance of micro-organisms, with resulting infections in sinuses, salivary glands, middle ear, and elsewhere. There is no doubt about the frequency and severity of vitamin-A deficiency in various parts of the world at the present day. Thus it is the commonest cause of preventable blindness in India where, I understand, the incidence of blindness is very high. It was, and presumably still is, responsible for a large mortality among Japanese children, it is prevalent in China, and causes widespread night blindness among the fishing population of Labrador and Newfoundland, to mention some of the regions where the subject has been studied.[20] It has been found that an early symptom of this deficiency is a papular dry skin; 29 per cent. of children examined in vernacular schools in Ceylon were thus affected.[21] We may safely assume that in these areas vitamin A deficiency is an important factor predisposing to infection. It would be interesting to know what part it is playing in the spread of the present epidemic of malaria in Ceylon.

What about the prevalence of vitamin A deficiency in this country, and are any of the common infections among our people due to this deficiency? Apart from a group of about 100 cases of xerophthalmia and night blindness reported by Dawson in 1928–29 from Darlington, and smaller groups from another part of Yorkshire and from Newcastle on Tyne,[20] I know of no large group of proven cases of this disease in this country of recent years. The records of Stephenson[22] and others show that it was common among children in London at the beginning of this century. Since then the standard of diet in institutions and in working class homes has undoubtedly improved, and severe vitamin A deficiency is a rare disease. Probably the proof that an early symptom of this deficiency is a dry skin will bring many more incipient cases to light. I suggest, for example, that the boys observed by Corry Mann whose dry skins regained their normal texture when they were given a daily ration of milk, butter, or watercress, were pretty certainly suffering from vitamin A deficiency among their other dietetic defects.

As the question of the prevalence or otherwise of vitamin-A deficiency and of associated infections seemed one of considerable importance I started an investigation about four years ago to try to determine whether a group of artificially fed babies (getting a type of feeding very common in this country) suffered from any deficiency of vitamin A.[23] This observation lasted about two years, and controls and babies getting extra vitamin A showed extremely little difference in any respect except one. That was in the incidence of infections of the skin. The skin infections were for the most part mild. I classified as infective skin lesions such conditions as the following: napkin rashes, dribbling rashes and intertrigo, all of which may be regarded as due to microorganisms of low virulence gaining an entrance as a result of some local irritation of the skin. These minor infections of the skin were about twice as common in the control babies as in the babies given extra vitamin A, and this difference was apparent in the seasonal subdivisions, as well as for each separate type of lesion. This to my mind strongly suggests that susceptibility to infections of the skin is a very early symptom of vitamin A deficiency and that such slight deficiency of vitamin A is probably common among those babies in this country who do not receive some extra supply of vitamin A such as is provided by a cod liver oil supplement. I am hoping, however, to get further evidence on the subject. It is interesting that when one looks up the reports of xerophthalmia and keratomalacia bearing this aspect of the question in mind, one finds that the presence of skin infections is mentioned by a very large proportion of the writers.

When severe vitamin A deficiency is present the records nearly always mention a high morbidity rate from various infections, and undoubtedly A-deficiency itself is in part responsible but as severe vitamin A deficiency is only likely to occur on a diet containing little meat, fat, fish, eggs, milk, and milk products or green vegetables, it is almost always found in association with other deficiencies, which complicate the picture so that it is impossible to assess the part played by each. For example Bloch found that 80 per cent. of his group of 86 children with keratomalacia suffered from an infection of either the respiratory tract, the ear, the urinary tract, or the skin, but though he apparently attributed a principal rôle to vitamin A deficiency, it seems that many of his cases suffered also from deficiencies of inorganic elements and of the vitamins D, C, and probably B.

There exists up to now, so far as I know, no satisfactory evidence that any of the common respiratory diseases occurring *in this country* are attributable to a deficiency of vitamin A, nor of the efficacy of vitamin A in the treatment of any of our common microbial infections. However, I fully expect that vitamin A deficiency will be proved to be much commoner in this country than many of us had imagined.

CONCLUSIONS

What I have said is sufficient, I think, to show that in spite of the difficulties of the subject we have information to prove that British diets are often deficient in a variety of factors and that a deficiency of any one of a number of different constituents of the diet will increase susceptibility to infection, and that the types of infection particularly associated with individual deficiencies may vary. Thus a deficiency of iron causes a baby to be more susceptible to all common types of infection, including respiratory infections and gastro-intestinal infections; a deficiency of vitamin D is probably particularly associated with infections of the respiratory tract; a deficiency of vitamin A leads to epithelial changes which facilitate the entrance of micro-organisms, so that skin infections are an early feature. I have talked only about one mineral deficiency and several vitamin deficiencies because I have tried to confine myself to certain deficiencies whose effects we are now able to recognise. Probably by degrees increasing knowledge will reveal a relationship between many different types of defective diet and various diseases whose etiology is not yet fully understood. An interesting observation of this nature was recently described by Orr and Gilks[24] in two East African tribes whose markedly different diet was apparently reflected in the different diseases to which they were subject. The diet of one tribe consisted chiefly of milk, meat, and raw blood; the diet of the other of cereals, roots, and fruits. The latter tribe had a high carbohydrate diet low in calcium. The males averaged 5 in. shorter and 23 lb. lighter than in the meat-eating tribe, and their muscular strength, as shown by their grip, was 50 per cent. less. This tribe suffered from a high incidence of disease including bony deformities, dental caries, anæmia, pulmonary disease, and tropical ulcers. The meat-eating tribe, on the other hand, suffered from a high incidence of constipation and rheumatoid arthritis. The part played by the diet as apart from race in the different physique and illness rate is not settled, but the possibility that diet is the ruling factor is very interesting and opens up questions of fundamental importance to clinicians and public health officers alike.

In conclusion it is scarcely necessary here to emphasise the fact that it is quite impossible for the wife of a man on unemployment benefit or getting relief from the public assistance committee to feed her family adequately, unless she has some other source of assistance. If these defective diets are, as I believe, generally associated with increased susceptibility to infection, what must be the toll of disease, preventable by an adequate diet, in this country. Perhaps someone would like to work out the cash-saving to the nation if, say, our morbidity-rate could be halved The consequent increase in happiness I will not ask you to imagine. Our knowledge of nutrition and our dietetic standards are fortunately much higher than 30 years ago—may our progress in the next 30 years be as great.

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MEDICINE AND THE LAW

A Question of Volition

MEDICAL practitioners and certain other professional men stand in a confidential relationship towards those who require their services. For this reason a gift from patient to doctor may sometimes be challenged in the law courts on the ground that the recipient could and did exercise undue influence over the giver. A recent action, where undue influence was alleged, is a reminder that the law is not so ready to interfere if the parties are husband and wife Whether or no the idea is now too old-fashioned, it has been deemed natural to suppose that a wife would and should be guided by her husband's advice. In De Pret-Roose *v* De Pret-Roose a wife sought to set aside a deed of separation (under which she agreed to pay her husband an annual sum) because of his alleged coercion and undue influence; she said he had induced her to sign the deed by a threat that he would otherwise remove the two children of the marriage to Belgium so that she would never see them again. The judge came to the conclusion that the husband did make a threat of some kind and that the threat operated upon the wife's mind and influenced her in the contractual arrangements which she made with him. But in the judge's view the separation deed could not be set aside unless the wife could show that, when she signed, her powers of volition were so paralysed by his words and acts that she merely gave expression to the will of the husband and not to her own will. Applying this test, the court found that in the preparation of the deed the wife was advised by her solicitor and never lost her own volition; she knew what she was doing and she intended to do what she did. Thus she failed to establish her case and her claim was dismissed with costs.

Threats would seldom be a feature of cases where undue influence is alleged against doctors or lawyers or other confidential advisers. The usual complaint in such instances is that the professional relationship has been too ingratiating rather than too minatory. As already explained, the relationship of husband and wife presents no legal parallel, except that in both classes of case the court is likely to be favourably impressed if the person who has conferred the disputed benefit had independent legal advice beforehand.

Needle Broken in Hypodermic Injection

In Gerber *v.* Pines a plaintiff and her husband obtained small damages without costs upon an allegation of professional negligence Mrs Gerber underwent injections for rheumatism, after six had been successfully given, the needle broke. This occurred on August 11th, the broken part remained in her body until the 16th, when it was removed by operation. As regards what happened after the needle broke, the doctor's case was that he had been warned by Mr. Gerber never to alarm the patient, that on that account he did not inform her of the accident at the time, and that, when he tried to inform her husband, he found himself unable to do so owing to a change of address. Clearly the most important allegation was that the doctor had been careless in handling the needle. Mr. Justice du Parcq, who tried the case without a jury, found no reason to suppose that the doctor's advice had been negligent or that the breaking of the needle was otherwise than accidental. There was always, he said, the possibility of an involuntary spasm; he thought that this had occurred and had caused the needle to snap The judge found no evidence of any lack of skill or care. But then came another side of the case. Dr. Pines knew at once that the needle had broken off and that the broken part remained in the patient's body. The judge ruled that a patient in whose body a doctor finds that he has left some foreign substance is entitled to be told at once. There might be exceptions to this general rule; it might very well be that Dr. Pines, having been cautioned by the husband not to alarm the patient, might be justified in telling the husband before he told the wife. If so, it was important that the doctor should have told either the patient or her husband before the patient left the surgery. The patient went home by omnibus, and there was a risk that the needle might have shifted. The judge did not think the doctor took every reasonable step to perform the duty of informing the patient or her husband Mrs. Gerber had given him the address of 4, Marylebone-road, and had been unable to tell him the telephone number. The doctor had afterwards tried to find her number in the telephone directory in vain; he had always conversed with her in Yiddish and knew her as Garber, not Gerber. He went to 4, Marylebone-road but failed to find the family there. Mr. Justice du Parcq at one stage of the case observed that he did not think it was any breach of duty for a doctor not to make a note of his patient's address. In delivering his final judgment he said that it would have been simple for Dr Pines to look in the telephone directory while Mrs. Gerber was still in his surgery. He would then have found that no one named Gerber was at 4, Marylebone-road, and a little further inquiry would have enabled him to discover the correct address. "There was a breach of duty and negligence on the doctor's part in not at once informing either the patient or her husband on the day of the accident." The damages, said the judge, must be small; apart from certain out-of-pocket expenses, the plaintiff was entitled to be compensated for her pain and suffering on the few days between the accident and the subsequent operation for removal of the needle, since the doctor's omission to give the information had caused delay in operating. A fair amount to award, said the judge, would be five guineas. He gave judgment for that amount, depriving the plaintiff of costs because her claim had failed on the greater part of her case.

VIENNA

(FROM OUR OWN CORRESPONDENT)

UNEMPLOYMENT AND NEUROSES

For the past two years there has been a distinct and ever increasing preponderance of men among the patients who attend the five principal psychotherapeutic clinics in Vienna. This increase is attributed to the mental instability caused by unemployment which is more dangerous to men than to women, for women even though unemployed are better able to find occupation in the home. The chief cause of nervous disease, it is thought, is a lack of self discipline and of social feeling which makes the patient forgetful of his duties towards his family and his surroundings, and treatment aims at restoring to the patient his sense of social duty. The typical neurotic conditions met with are anxiety neurosis, sexual neurosis, hysteria and depression and attempted suicides are common. The first two forms are more frequent in men, in women the organic neuroses are prevalent, though the rarity of cases of sexual neurosis may be explained by a feeling of shame or an ignorance of what is really the matter with them on the part of the patients. The results given are 13 per cent. cured (that is, fit again for work), 20 per cent. improved or fit for some light work, 30 per cent. only fit for an institutional life, while the remainder drift away and are lost sight of.

PROFESSIONAL SECRECY

In a recent penal case in a Vienna court a ruling was given on the old problem of professional secrecy. It was laid down that in a criminal case the practitioner is bound to give any information required by the court or magistrate. He must also report notifiable diseases or injuries caused by violence. This is *no* violation of professional secrecy. In civil litigation the doctor may disclose any facts brought to his knowledge through his professional services to a patient at the patient's request and to persons whom the patient names—i.e., a life insurance company or in a claim for damages due to an accident. Professional secrecy only protects a "secret," that is to say, facts which may properly be kept secret and which may if published cause harm to the interests of the patient. If the suppression of a "secret" might cause injury to a third person (infectious disease of a wet nurse or of a bridegroom) the third person should be warned. Any doctor who infringes these rules will be struck off the Medical Register for three months for a first offence, for a year for a second offence, and for ever if he commits the offence a third time.

PARIS

(FROM OUR OWN CORRESPONDENT)

SEASICKNESS AND EMPIRE

The senior medical officer of the [illegible], Dr. J. Robee, has discovered the secret of the genius of the English for travelling and colonisation. They have refused to recognise seasickness. That is all. "La mentalité anglaise ignore le mal de mer comme une faiblesse inavouable." The Frenchman, on the other hand, fears seasickness and confesses to this fear. The Englishman's attitude is one of disdain and indifference; the Frenchman's is one of [illegible] which is extended to the ability [illegible] to combat seasickness effectively. Yet Dr Robee has come to the conclusion that seasickness can now be controlled by the doctor who distinguishes one type of seasickness from another and suits his therapeutic activities to the varieties of his diagnosis. But there must be no blunderbuss employment. As for the proprietary remedies, their diversity betrays their failures. Besides, the dosage of their active principles is too timid. Only the doctor can deal effectively with this trouble. Dr Robee begins by distinguishing between ordinary seasickness, which is a hypervagotonic crisis, from the other forms which are the sympatheticotonic, amphotonic or hypersympatheticotonic, and psychic or mental forms. To this end note must be taken of the symptoms, the vagosympathetic reflexes, the blood pressure, &c. Having made his choice between this impressive list of diagnostic alternatives, the doctor proceeds to action, and if he is too late to prescribe prophylactic measures—and this has been known to happen—he may yet reduce the duration of acute suffering to a few hours if he adopts the hypodermic mode of medication. Dr Robee has used belladonna and its alkaloids many years ago, and when, in 192[illegible], Prof. Stal[illegible] of [illegible] published his observations on [illegible] hyoscyamine he began to use this drug and the total extracts of belladonna when he wished to deal with the vagus, giving ergotamine when he desired an effect on the sympathetic. If drug treatment is ineffective, either the wrong drug has been chosen or its dosage is inadequate. Voilà tout.

NEGATIVE TUBERCULIN REACTIONS IN A [illegible] MILIEU

The Michelin factory at Clermont-Ferrand, a medium sized town, has established a dispensary at which some instructive investigations have recently been conducted. Among [illegible] children between the ages of 3 months and 15 years the percentage of positive tuberculin reactions rose from [illegible] under the age of 1 year to 44.7 between the ages of 12 and 15. Similar tests recently carried out in Paris would have yielded 79 per cent. positive reactions between the ages of 14 and 15. The comparatively high rate of positive reactions in Paris may well be due to conditions which can bear no comparison with such a model town as Clermont-Ferrand. But how to explain the negative tuberculin reactions of [illegible] children belonging to 22 tuberculous families? When the test was repeated some time later it was still negative, although in several cases the tuberculous with whom the children were in contact was certainly [illegible]

[illegible]

Strassnie,[2] who records these observations, does not think that they detract from the value of the Pirquet test, from whose evidence he concludes that these children had escaped infection. But that, surely, remains to be seen

TYPHOID AND OTHER INFECTIONS

The comparatively high death-rate in France is evidently due in part to faulty public health measures In his survey for 1933, delivered at a recent meeting of the Academy of Medicine, Louis Martin, the new head of the Pasteur Institute, said that of 38,007 communes, only 10,657 are provided with potable water. The fact that more than 2000 communes have been provided with such water within the last three years shows that the authorities are alive to its importance In some areas there are two water-supplies, only one of which is potable, but the trouble with such a system is that anastomoses are sometimes established between the two, and in a certain large port it is very difficult to distinguish the two supplies by their degree of purity. A further objection to such a double system is the temptation it offers to economise by turning the wrong tap

Dr Martin also referred to certain seaside communities who add typhoid fever to their holiday distractions, and as holiday-making by the sea has become a convention, the alternative of typhoid vaccination must be considered. But the best measure would certainly be the provision of water which was really potable As for undulant fever, notified only in 17 Departments in 1925, its extension has been such in the interval that it has now been observed in 57 Departments Energetic prophylactic measures are required to meet the extension of this disease which constitutes a very real danger to agriculture and public health Be it noted, however, that only in a very few cases has the milk of sheep and goats been incriminated As for diphtheria, it continues to be prevalent, although it is the most conscientiously notified and effectively combated of all the infectious diseases In the Department of the Rhône, it has been noticed that a decline in the morbidity has always followed the *vaccination with anatoxin (toxoid) of two-thirds of* the children in a community; but if less than half of them are vaccinated, there is little change in the morbidity A commission has been appointed by the Academy to study vaccination against diphtheria.

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[2] Rev de la Tuberc, October, 1934, p 821

OBITUARY

ARCHIBALD CAMBELL, M.B., Ch.B. Manch.

The death occurred on Dec. 14th at Southsea of Dr Archibald Cambell, a general practitioner whose work in Portsmouth and the district in the treatment of venereal disease gained him high and well deserved credit

Archibald Cambell received his medical education at Owens College, Manchester, and graduated as M B, Ch B Vict Manch., in 1905 After holding minor appointments, among others that of clinical assistant at the Hospital for Diseases of the Skin, Blackfriars, he settled in general practice at Portsmouth In 1914 he joined up immediately and saw active service in France, and became here keenly interested in the prevention and treatment of venereal diseases He was appointed venereal specialist and dermatologist at the military hospital at Hilsea, later being placed in charge of a new venereal diseases clinic opened in 1917 in Portsmouth He filled these two appointments with conspicuous success, the latter one until just before his death He showed himself to be a first-class organiser; we have the testimony of one of his colleagues to the effect that the venereal diseases department at Portsmouth is a model of efficiency, while the work done there has received special commendation from the Ministry of Health As a result Cambell became known far beyond the limits of Portsmouth as an authority on venereal disease, both as pathologist and therapeutist he was sound, while he showed ingenuity in the invention of instruments for use in venereal practice—as an example we may mention an aero-urethroscope which he described in these columns in 1918, and a vacuum bougie, described in the columns of the *British Medical Journal*, for use in the treatment of chronic gonorrhœa The practical outcome of his labours in Portsmouth must have been very gratifying to him for in 1931 he had the satisfaction of seeing the city rank third lowest of the 20 largest towns in the country as regards the attack-rate of venereal disease He was also particularly active in the care of children congenitally affected, and under his treatment many who might have been permanent victims were able to grow up as healthy members of the community.

Dr Cambell, in addition to his skill and punctilious care in the discharge of his duties, gained the high regard of both the medical profession and public by his personal kindness and sympathetic manners.

HORACE SMITH, M D., Camb.

Dr Horace Smith, who died on Dec 4th, had a successful career as a student An exhibitioner in natural science at Trinity College, Cambridge, he graduated in the first class of the Natural Science Tripos in 1888, taking the M B, B C, he did his clinical work at St Mary's Hospital, London, and proceeded to the M D in 1898 At St Mary's Hospital he filled the post of house surgeon, and was then for a time honorary physician at the Boscombe Hospital but he retired early from the medical profession only to return to it on the outbreak of war when the volunteer regiment to which he belonged became the 7th Battalion of the Hampshire Regiment He was 67 years of age at the time of his death

FREDERICK SPICER, M D Durh., F.R C S I.

The death occurred on Nov 7th of Dr Frederick Spicer, one of the small but increasing number of medical men who are also members of the Bar He received his medical training at St Bartholomew's Hospital and the University of Durham, where he graduated in 1883, proceeding to the M D in 1885 and securing a gold medal at the examination After qualification he acted as house surgeon to the Royal Free Hospital, and later as registrar at the Central Throat and Ear Hospital. The latter appointment directed his attention to a special branch of surgery, and he graduated in 1905 as B S Durh. and four years later became F.R C S Irel He made practical contributions to the laryngeal section of the Royal Society of Medicine, and was elected to the staff of the Metropolitan Ear, Nose, and Throat Hospital, where he was senior surgeon at the time of his death

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

UNEMPLOYMENT ASSISTANCE

The New Scales of Relief

IN the House of Commons on Dec 17th Mr OLIVER STANLEY (Minister of Labour) moved that the draft Unemployment Assistance (Determination of Need and Assessment of Needs) Regulations, 1934, made under the Unemployment Act, 1934, be approved. The proposed scales, he said, were the result of a very careful survey by the Unemployment Assistance Board of the primary needs of the people for whom they had been made responsible. There were very great differences in the results which had been arrived at by the different social surveys, but in deciding whether the Board had succeeded in their task or not it was not fair to pick out the best bits from each of those scales and put them all together into one scale with which to compare the Board's scale, to the great disadvantage of the latter. In the spring of this year there was a hotly contested debate and even a closely contested division, on the question whether a child should receive 2s or 3s. In the new scale the minimum for any child under 5 years of age was 3s and that amount increased with the age of the child, which was a new principle. This was the first time, he thought, that the distinction had been made on the proper basis, which was that the older the child the more it needed and the more it should receive. Hon. Members would agree that in comparison with the old scale under which the vast majority of those on transitional payments had been dealt with, this new scale for a family with children was an immense improvement.

He had received that day from the Children's Minimum Committee certain criticisms on the subject of the scale for children. They frankly admitted, with all the criticism they had to make that the scale represented a great advance on what had gone before. However, they attempted to make out a case for a higher rate, claimed that the scale was still inadequate, and gave figures to form a comparison between the British Medical Association's scale for food and the Merseyside scale for such things as fuel, light, and clothing, and the scale adopted by the Board. It would have been possible to take the Merseyside survey as the basis for the whole of the need including food. Were that done, it would be found that the Board's scale for a man and wife and three children was higher than the scale laid down in the Merseyside survey. With regard to the B.M.A. scale, he did not pretend to be sufficiently a scientific expert to say whether that scale, or the scale produced by three or four other surveys was the theoretically correct one. It did happen that the B.M.A. scale which had been selected for comparison was very much the highest in the matter of food. One of the reasons why the British Medical Association scale for food was so much higher than any other scale was the very large provision which it made for milk. The B.M.A. scale, and the costing of that scale were drawn up before the scheme for the provision of cheap milk in schools was produced and the scale required revision in view of the fact that the milk, which formed such a large part of it, could now be got elsewhere.

Dealing with the question of the treatment of resources other than earnings Mr Stanley said that with regard to milk and school meals the basis which the Unemployment Assistance Board were going to adopt in the first instance was as follows: All meals given on a doctor's certificate that a child was suffering from a specific physiological condition and required extra nourishment were to be set off against the personal medical requirements of the children and ignored. The next provision dealt specifically with milk or other special provision, such as cod liver oil, which was to be entirely ignored. The provision of meals up to two per day for a single child in a household, or one meal for two children, would be ignored, as constituting a negligible saving to the family. That was to say, 12 meals in the week in the household were free. After that, some deduction was to be made in respect of those meals, which worked out at roughly 1d. a meal. As regarded medical relief, maternity and child welfare, and tuberculosis services, any payments or allowances in kind under those services would be regarded as being set off by the special needs, and would, therefore, be ignored. In the case of old age pensions, widows' and orphans' pensions and blind pensions under the Blind Persons' Act, 1920, any balance after providing for the pensioners' needs at the scale rate would be allowed for personal requirements where there were no other resources. In other words, in those cases, it would be ignored.

THEIR ADEQUACY CHALLENGED

Mr GREENWOOD for the Labour Opposition, moved an amendment to the effect that the Regulations would be inadequate to ensure the maintenance of unemployed persons and their dependents in health and physical efficiency. Referring to the adequacy of the scale, he said that Mr Stanley tried to dispute the validity of any kind of comparisons. The right hon. gentleman said, "Of course, if you accept the B.M.A. scale you should accept it for everything. If you accept the scale of the Merseyside Social Survey Committee you should accept it for everything." His (Mr Greenwood's) reply was that as regarded the question of ascertaining the food values and human needs as regarded food, it was far better to place reliance on the B.M.A. than on a non-medical body like the Merseyside Survey Committee. While he complained about the price that the British Medical Association put on their food values—it was not their job to do that—they were entitled to say as regarded food needs that there was no higher authority that they could accept than the British Medical Association. As regarded other needs, he was prepared to accept the Merseyside Survey Committee's report, because they were dealing with things within their knowledge and that would not apply to the other elements in the cost of living if the British Medical Association had tried to elaborate the scale.

The first point in regard to the B.M.A. scale was that examinations which had been made by working class women of experience, who could be relied on to buy in the best possible market, showed that it was impossible to buy the amount of food laid down in the B.M.A. scale at the price suggested by the British Medical Association. He would quote a case in point, where the Medical Officer of Health for the Lancashire town of Middleton, said that the prices were higher within that area than those in the B.M.A. scale. He estimated that it would need 24s in the town of Middleton to buy the food which the British Medical Association said could be bought for £1. That meant that the estimate of the B.M.A., not in terms of values but of the money needed to buy that food, was about 20 per cent. wrong because the prices were 20 per cent. higher than they estimated.

He (Mr Greenwood) was not blaming the B.M.A. for not being able to change calories into pounds shillings and pence but he could give the House a list of places showing that the scale of the British Medical Association measured in money was hopelessly below what would actually be possible. In [illegible] towns it would need 25s, 26s or 27s to buy the amount of food which the B.M.A. suggested would be bought for £1. In the [illegible] district the price that would have to be paid for £1 of food which the B.M.A. list would require something like

22*s.*, 6*d.* That made any disparity between the Unemployment Assistance Board's scale and the British Medical Association's scale all the greater, because the amount of food which the British Medical Association suggested could be bought for that amount of money could not be so bought. It was clear to those who had examined the regulations, and gone through the scales and tried out various sizes of families, which he had spent part of his week-end in doing, that there was a very considerable disparity in many cases. He was certain that if the B.M.A. scale was examined as it stood, not subject to a 20 per cent. increase in costs, it would be found that there was a serious disparity between that scale and a reasonable allowance for the barest physical needs of life, which meant that the Government were not meeting the minimum physical requirements of the people, which was what they set out to do. He could not understand the attempts of supporters of the Government to prove that malnutrition did not exist. He was not going to pretend that we were on the whole a C3 nation, and that there was evidence of malnutrition everywhere, but he said that when people tried to belittle the effects of malnutrition they were not acting in the public interest. It was the Chief Medical Officer of the Ministry of Health who said that malnutrition should be judged objectively; he did not see the cases, but the Labour Party had a certain volume of evidence that under the existing standards of unemployment insurance benefit or transitional payments, numbers of people, especially young people, were suffering from malnutrition, and, unless the scheme was sufficiently generous to meet all reasonable physical needs, the amount of malnutrition which existed to-day would increase.

On Dec. 18th Mr. JAMES REID said that the increased benefits to children were substantially accepted as going very nearly the whole way to meet the case of the Labour Party. The scales and the regulations for adults were in every case higher even than the scale put forward by the British Medical Association. The Government were entitled to say on the highest medical authority that the scales which they proposed were fully adequate for all adults.

Mr. MANDER said that some reference had been made to the scale of the B M.A. They wanted in those matters to be up against scientific realities. What better test could they apply than exact knowledge worked out by experts of the amount required to maintain a person on a decent level of subsistence? The B.M.A. scale under-stated rather than over-stated the cost. It seemed to him to be a very severe criticism of the regulations that there was a gap of 1*s.* 8*d.* between the regulations and the B M A. scale, and in the case of five children a difference of 8*s.* 3*d* That alone was a ground for rejecting the regulations.

MISS RATHBONE said that Mr. Oliver Stanley had tried to belittle the figures presented by the Children's Minimum Committee by suggesting that it was not quite fair to pick out the best bits of the different estimates and after putting them together to point out that the Board's scales by comparison showed a deficiency. That was not what the Children's Minimum Committee had done. They took the British Medical Association's scale for food, not because it was the highest scale but because it was the most authoritative, and because its findings were in substance endorsed by the Minister of Health's own Committee on nutrition. If the Minister disputed the authority of the joint British Medical Association and Merseyside surveys would he tell the House on what the Board's own scales were founded? Her own impression was that all these scientific scales tended rather to under-estimate than over-estimate needs.

APPROVAL OF SCIENTIFIC METHOD

On Dec 19th SIR FRANCIS FREMANTLE said that this was a great measure dealing with a very great problem. The scientific method of setting out an analysis with the different factors provided a machine capable of very great development for the future. There was far more elastic machinery in this than in any other of our social services hitherto. It was very remarkable that it should come into force in 1934, exactly a century after what was considered the greatest reform of its time, the Poor Law Reform Act, 1834, although this scheme would have to undergo, he expected, as long a series of changes as the other Act did

Constant references had been made to the scale of the B M A. and other scales, and general figures had been given which were 5*s* to 6*s.* for a man and from 4*s.* to 5*s* for a woman according to the particular scale adopted As regarded growing children the regulations made a difference, but he thought that was a case where really a little further elaboration was needed. This was one of the most difficult points that was raised by the B M A. and it was one about which the medical officers of health felt very strongly. He (Sir F Fremantle) was at a meeting of the Council of Health Education at which Prof. Nixon gave a very important and instructive address on the question of nutrition It was surprising to learn what a very large amount of food was required by infants in comparison with their weight. In the ordinary way the actual requirements of an infant was 50 calories per lb. of body-weight, while the adult required only 20 The actual amount allowed in the scale for cost of food was 2*s.* 6*d.* for the infant, or only about half as much as was provided for the child between 12 and 14—namely, 4*s* 6*d.* The growing child's requirement was really heavy, and it was a serious question whether the scale, if it was rigidly followed, would provide a sufficient allowance for the children. As regarded the cost of food he did not think it was sufficient, but there were other overhead expenses which did not reach anything like the same amount in the case of a child. One could not generalise on the subject, but the criticism that was generally made by those who had gone into this question from the point of view of the B M.A. and the medical officers of health was that, while the scale which had been laid down was on the whole a generous scale and met the case of a family consisting of a man, his wife, and two children, yet, where there were more children than that, it tended to be rather below the standard that was required, according to the B M A There were, of course, different standards. The Children's Minimum Committee had done splendid work in this direction, but their report did not mention the scale laid down by the equally and perhaps more efficient Advisory Committee on Nutrition appointed by the Minister of Health It had been suggested that the Minister had hurriedly appointed that committee after the Committee of the B.M.A. had reported, but, as a matter of fact, the Advisory Committee was originally appointed in 1931 to deal with the whole question of food and nutrition It was a Standing Advisory Committee. It put forward a lower scale considering that 3000 calories were enough for a man as compared with the B M.A figure of 3400 There being this discrepancy, the two committees met, and the result of their conference was shown clearly in the report of the Ministry of Health last year Those two bodies of men, who were colleagues, knowing one another well and respecting each other's opinions, discussed the difference between their findings and decided that the all-round average requirement for the entire population, or for large mixed groups of people at the present time, was about 3000 calories a day, against the B.M.A figure of 3400, and that figure, they said, could be safely employed for the calculation of mass requirements, but would not necessarily be applicable to individuals or single families whose condition might require separate treatment.

MISS RATHBONE asked if it was not the case that the unemployed household in which the man was actively seeking work was rather in the position contemplated the scale of the British Medical Association than that contemplated by the Advisory Committee Was it not explained at the conference that there was no real difference between them, but that the British Medical Association's scale was more apposite to the unemployed man who was seeking work?

Sir F FREMANTLE said that he thought their actual conclusion was that the Advisory Committee's figure of 3000 calories was right for a man who was not engaged in work at the time, and that the British Medical Association's figure of 3,400 was right for those who were actually employed That was roughly the division between them as it was summed up at the conference Anyhow, the scale which the House was now discussing was within the general requirements for the population It might need revision in certain directions, especially as regarded the children of larger families The larger families were still part of the problem, but that was no reason why they should not be dealt with, and he hoped they would hear from the Government spokesman in regard to the possibility or probability of revision of these regulations. It was left vague in Section 52 of the Act

Apparently the Board was to report to the Minister from time to time How soon was the first time going to be? He hoped that members would not expect it to be as soon as had been suggested Three months would be absurd, because there was not time to get settled down, but within a certain time they ought to be able to have some idea how the scales were working They could only agree to these being proper scales with which to begin if they recognised that, in the first place, they were going to be adjusted in accordance with special circumstances and, in the second place, that they would be open to revision In those conditions it seemed a proper experiment to make Another point that the B M A particularly wanted to have recognised was the provision in the regulations to meet large families in the economic sense of making a reduction for quantity in payment per head It was reasonable to make some such suggestion When the family was large there should be a reduction in the allowance per head when the family was living within its income, but if the family was living on the absolute minimum, there was very little reduction possible After all, these were cases which, to a large extent were living on a very small margin, so the reduction per head for quantity was a very serious difficulty with them At the same time, they rested *on* the assurance that there was to be adjustment *in special cases*

He asked hon. Members not to rely so very closely on these actual determinations of food values in calories. At the conference which had been referred to, one of the professors who spoke poured cold water on the whole question of calories, and showed how little they could trust to them They knew that a great deal depended on the quality of the food and on digestion, and so on, and it was difficult to lay down actual figures He suspected these standard diets but it was the only way in which they could arrive at some systematic arrangement for feeding people but they must recognise how very open to criticism these were, and how very little they met realities They knew that the value of food depended very largely on a mysterious essence called vitamins, and lots of those foods would be perfectly useless if they had not a sufficient amount of vitamins If they had good digestion and fresh food they could get on with a good deal less than the standard as laid down What they must have all the way through in carrying out these regulations was the human touch If they were going to have elasticity in administration they were going to have that human touch If they had it all might be well, and he believed all would be well, but it would require to be watched He was not going to mention the question of rent They all recognised the enormous possibilities for good and also for bad if it was not properly worked out which lay in laying down a definite standard of rent with all the adaptations which would be possible. What actual cooperation was there going to be between the Board of Education, the Ministry of Health, and the Unemployment Assistance Board in the actual working out of these tests? There were various ways in which one Government could help another For instance, if they were really looking about for cases of *malnutrition* in an early stage they wanted the medical officers of the Board of Education to advise *the officials of* the Unemployment Assistance Board of families which cases seemed to them to *require* assistance. In the same way, were the officials of Employment Exchanges going to be asked to draw the attention of the Board to cases which seemed to require need? He only made that suggestion as being a later development If they compared the *conditions in* this country with those in any other and the advance made in this country with conditions in the past, *they had* every reason to feel that we were doing the right thing We were leading the *world* in this experiment. We had gone ahead greatly in the last 20 years and he thought we would go ahead still *more* on the lines of these regulations

MINISTERIAL REPLY

Mr R S HUDSON, Parliamentary Secretary to the Ministry of Labour, replying to the debate, said that the figure quoted for the typical family of a man, his wife, and three children in the green document circulated by the Children's Minimum Committee some little time ago did not correspond with the figure given in the British Medical Association's scale The British Medical Association's figure was 20*s* and the figure quoted in the document was 21*s* 8*d*

After further debate the Labour amendment was negatived by 296 votes to 73, and the regulations were approved by 260 votes to 47

DEBATE IN THE UPPER HOUSE

In the House of Lords on Dec 20th, when the regulations came up for consideration, Lord MARLEY said that figures in a letter to the *Times* on Monday last showed the deficiency of the Unemployment Board's scale of allowances per child compared with the scale laid down by the British Medical Association and the Merseyside scale The scales laid down in the regulations were likely to affect the heads of the families which came under them They were inadequate for building up healthy strong and capable future citizens They were shillings per week below the British Medical Association scale, which was itself founded on a price level which few of their lordships would be able to put into effect if they had the spending of the money.

Lord ROCHESTER Paymaster General, said that with reference to the difference between the scale of the Unemployment Assistance Board and the British Medical Association the question had been considered at a conference attended by representatives of the Ministry of Health and the British Medical Association The conference had deplored the exaggerated importance that had been attached to the alleged disagreement between the two committees which had drawn up scales It had stated that there was no fundamental disagreement between the two bodies on any matter of scientific importance The Board scale, taken as a whole compared very favourably with the average of these other scales to which reference had been made The regulations were at least a distinct advance on anything which had previously been enacted

The draft regulations were agreed to

Petition against Vivisection

In the House of Commons on Tuesday, Dec 18th, Mr Isaac Foot presented a petition signed by 21 persons which stated that, believing [illegible] to be morally unjustifiable [illegible] dangerous and demoralising [illegible] the petitioners earnestly prayed the House to pass

Bill withdrawing the sanction of the law to this practice

HOUSE OF COMMONS

TUESDAY, DEC 18TH

Viscountess Astor asked the Minister of Health how many local authorities empowered under the Maternity and Child Welfare Act of 1918 to set up maternity and child welfare centres had, up to the present, taken no action —Mr Shakespeare (Parliamentary Secretary to the Ministry of Health) replied According to the latest information available to my right hon friend's Department, four of the 422 maternity and child welfare authorities in England and Wales have not yet set up maternity or child welfare centres, and 46 others who have provided welfare centres have not yet set up separate antenatal clinics In some of these areas there are, however, voluntary clinics working in harmony with the local authorities, and in others of a rural character, where the provision of clinics is not practicable, arrangements are made by the local authorities for antenatal supervision by general practitioners

Viscountess Astor Can the Minister do anything to bring the authorities who have not taken advantage of the Act of 1918 up to date and make them set up clinics ?

Mr. Shakespeare . The noble lady will recall that we have sent out a circular of reminder to every one of these authorities I trust that in the course of the next year many of these authorities will set up clinics.

WEDNESDAY, DEC. 19TH

Maternal Mortality

Mr. Gledhill asked the Minister of Health the figures of maternal mortality for the last three complete years in Halifax, Huddersfield, and Bradford, and the average maternal mortality-rate in each of these boroughs for the past ten years —Mr Shakespeare replied The following is the statement asked for .—

Year.	Halifax county borough		Huddersfield county borough		Bradford county borough	
	Per 1000 live births	Per 1000 total (L S) B	Per 1000 live births	Per 1000 total (L S) B	Per 1000 live births	Per 1000 total (L S.) B
1931	3 21	3 10	4 99	4 73	4 91	4 68
1932	9 25	8 75	5 19	4 88	5 97	5 69
1933	10 94	10 28	9 24	8 81	4 87	4 65
Average 1924 to 1933	7 19	—	5 73	—	5 35	—

(L S) B =Live and stillbirths

During the decennium 1924–1933, the basis of maternal mortality rates was changed from live births alone to the total of live and stillbirths As figures for the earlier years of the decennium are available on the original basis only the 10 years' averages have been calculated upon that basis, and for purposes of comparison the figures for the last three separate years are given upon both bases

Ministry of Health Consultative Councils

Mr. Llewellyn-Jones asked the Minister of Health what consultative councils were originally established in England under Section 4 of the Ministry of Health Act, 1919, which of these councils still continued to function, how many members there were on each of the existing councils; and how many meetings of each of the councils had been held in each of the years 1932, 1933, and 1934 respectively —Sir Hilton Young replied: The answer to the first question is four, and, to the second, the Consultative Council on National Health Insurance (Approved Societies' Work) This Council has 39 members and met twice in 1932, and once in each of the years 1933 and 1934

Milk-supplies to Necessitous Children

Mr. West asked the Parliamentary Secretary to the Board of Education whether necessitous children must now have a medical certificate before they could be supplied with milk by a local authority —Mr Ramsbotham replied · It is presumed that this question refers primarily to the provision of milk for children attending public elementary schools The method of selection at present var
different areas, but the board have urged that a me
basis should be adopted as being in accordance wit
intention of Section 84 of the Education Act, 1921,
the most effective means of securing that school m
whether in the form of solid food or milk, are suppli
those children who need them It is not necessary
medical recommendation to be given before a ch
supplied with free milk, as children may be given
provisionally pending a report by the school medical o

Noxious Fumes from Battersea Power Stati

Mr Alan Todd asked the Minister of Transport
was now in a position to make a report on the emissi
smoke and noxious fumes from the new Battersea p
station, in the light of his pledge to the borough of Ch
and the city of Westminster on this matter.—Ca
Hudson (Lord of the Treasury) replied A further r
by the Government Chemist's Committee is now
printed and will, my hon friend hopes, be presente
Parliament this week.

THURSDAY, DEC 20TH

Partially Sighted Children

Mr Ernest Evans asked the Parliamentary Secr
to the Board of Education whether it was the inte
of the Government to take any action on the report o
committee of inquiry into problems relating to par
sighted children —Mr Herwald Ramsbotham rep
The Board of Education are in general agreement wit
report of the Committee on Partially Sighted Chil
and are taking steps, as opportunity arises to give
to the committee's recommendations

Cheap Milk for Nursery-Schools

Mr. David Grenfell asked the Parliamentary Secr
to the Board of Education whether he was aware tha
present policy of refusing to sanction an expenditu
nursery schools had the effect of debarring these sc
from participating in the scheme for cheap milk,
whether he would consider the desirability of t
whatever step was necessary to bring these nursery sc
within the scheme —Mr Herwald Ramsbotham rep
The hon Member appears to be under a misapprehen
as it is not the policy of the Board of Education to r
to sanction any expenditure on nursery schools, and
schools are not debarred from participating in the sc
for cheap milk An increasing number of grant-ea
nursery-school sare eligible to participate in the sc
which does not, however, apply to schools of any
which are not recognised for grant

Refuse Disposal at Brighton

Sir F. Fremantle asked the Minister of Health
expert officers had inspected the Brighton syste
disposal of refuse by incineration in trenches and
given him any estimate as to its claim for effici
amenity, and economy —Sir Hilton Young rep
The system referred to, known as the "Feoenix" (see
Lancet, Dec 8th, p. 1321), has been inspected twic
my officers, in 1926 and in 1933. No local authority
so far applied for my sanction to a loan for installing
system If a local authority should apply for my sanc
I should form my judgment on the application in rel
to the needs and circumstances of the particular autho
but I could not with advantage form a judgment unrel
to actual circumstances.

Royal Sanitary Institute —A sessional mee
of this institute will be held at the Guildhall, Guild
on Friday, Jan 18th At 5 45 P M Dr F A Belam
open a discussion entitled "What is Scarlet Feve
and Mr. J. W. Hipwood will speak on the Wate
Guildford—Pure and Impure

Medical Practitioners' Union. —Applica
made by this union on Dec 14th for affiliation to
Trades Union Congress was acceded to by the Con
on Dec 19th The action was taken, we are informe
the interest of members of the Practitioners' U
employed by county and municipal authorities

CORRESPONDENCE

THE HEALTH OF MERCHANT SEAMEN

To the Editor of THE LANCET

—The discussion on help for shipping in the se of Commons reported in the *Times* of Dec 15th THE LANCET of Dec 22nd became of interest he medical profession when the Labour Party d the question of health conditions of merchant en. It involved a dispute between Dr Addison Mr Runciman, apparently old antagonists in and still at cross purposes Dr Addison for atements, so far as I can see was relying on Board of Trade's octavo Blue Book of 1932 ties relating to mortality in the Mercantile " which revealed for the first time the sur-ly increased mortality of seamen just when leave the service, and Mr Runciman countered otations from the provisional conclusions of mmittee in Paragraph (7) (quoted in THE , Dec 22nd, page 1422) as if definitive ddison quoted from the very exceptional, d unique, report which discussed the deaths rchant seamen, employed and unemployed tired, between Oct 1st, 1929, and Sept 30th Here of men employed at sea, 127,518 of 642 died in the year, most of them from se, while of the others 622 died within a year ving the service, comparatively few from nts.

deaths of the 642 were reported to the Board of but not those of the 622, where the reports only to the local registrars But with a view s Blue Book the Board of Trade had got from strars the forms on which each death and y had been entered These Mr Runciman let me examine, and my results were printed LANCET, August 19th, 1933 p 440 I found om disease 288 employed died in the year thin a year of becoming unemployed, 550 of unemployed or retired died Thus in three s, a quarter, 72, of the employed died, but three months of leaving the service 267 of these died. Of pneumonia in an ordinary quarter oyed would die, but 44 of the others in the ee months after leaving Of 127,518 men quarter died of tubercle in the active service the clearly much smaller number who retired, d of tubercle within three months of leaving o will condemn me if I say that all 20 must en infected before leaving the service and t in the service?

e service 24 men died of tubercle in a year, the service in that same year 110 men died of within a year of leaving These are facts year, of other years we have no information thing of the sort no doubt happens For the Government department responsible persuade us that 24 tubercle deaths an seamen measures with some accuracy the liability of seamen in the merchant service h from tubercle, when the only returns th they have suggest that the liability in the r of which they have information is times as great—24 and 110 = 134? nly excuse I can see is that the Board of Trade does n[illegible] understand what it is doing. And this is no [illegible]

The Board [illegible] Trade annual return of deaths of merchant sea[illegible] a very [illegible] publication. It [illegible] over the signature of any doc[illegible] that of a layman [illegible] In my time [illegible] 1921 an [illegible] of the Board of Trade [illegible] specially experienced doctor on the [illegible] to take responsibility for these published [illegible] Is it wonderful then that ten years ago the [illegible] the retirement that the [illegible] of these seamen should be turned over [illegible] Ministry of Health [illegible] the Board of Trade not [illegible] registered [illegible] It is not the [illegible] judgment of a committee, as they themselves say (p 154) not definitive or final (in fact [illegible]) and we know contrary to [illegible] experience that [illegible] a healthy occupation. Of course [illegible] death-rates, but as was seen [illegible] the Dardanelles during the war, [illegible] What the Board of Trade wants is a doctor of experience and [illegible] to keep on examining [illegible] and reports of deaths [illegible] the Board what they signify In the merchant [illegible] in the year 1929-30 24 men died of tubercle [illegible] the same year 110 men died of tubercle within a year of leaving the service; together these make 134 There were 127,518 men in the service [illegible] that makes rather more than 1 per 1000 dead of tubercle. The total mortality from tubercle in England and Wales in 1930 was, I believe, 0.9 per 1000 [illegible] the Board of Trade thinks [illegible] making seafaring healthy for merchant seamen.

Mr Runciman said the replacement of British seamen by foreign seamen was largely a matter of climate. He [illegible] space. Lascars need only have [illegible] cubic feet, British seamen must have 120 cubic feet [illegible] absorbs an extra ton of cargo space Why do the Transport Regulations require [illegible] cubic feet for each soldier on passage but the Board of Trade only 120 for seamen (72 for lascars) to live in permanently? Is the army extravagant or the Board of Trade [illegible]?

We hear nothing in the discussion of any [illegible] to make use of the report on [illegible] recommendations for seamen [illegible] by the Shipping Federation [illegible] in THE LANCET in 1932 (1932, i, 1507) perhaps it will govern the [illegible] new ships? Who will tell us of an English ship giving [illegible] 24 cubic feet in the cabins and 12 [illegible] in the mess place [illegible] I have seen all that [illegible] in a [illegible]

I am, Sir, yours faithfully,

W F. H[illegible], M.D., B.S., D.P.H. [illegible]

[illegible]

PLEURISY AS A PRECURSOR OF PHTHISIS

To the Editor of THE LANCET

[illegible]

an effusion is rightly regarded as suggesting tuberculosis. Many years ago Osler pointed out that spontaneous pneumothorax occurred in young adults, chiefly men, and that, if no effusion followed, a good recovery could be expected without danger of pulmonary tuberculosis developing later When effusion does develop in a case of so-called idiopathic pleurisy it is almost invariably found that a sample of the fluid is of a tuberculous nature, and it seems to me most unwise to suggest to students and medical practitioners that such effusions are not of tuberculous origin. The effusion is the result of a tuberculous lesion, and sanatorium or similar treatment is essential to prevent the development of activity in the lung. I suggest that the good results described in your annotation are the direct outcome of sanatorium treatment, and that one should appreciate the fact that active tuberculosis can be prevented by thorough treatment and that neglect often leads to disastrous results. I am, Sir, yours faithfully,

L. S. T. BURRELL.

New Cavendish-street, W, Dec 18th

SEVERE GASTRIC AND DUODENAL HÆMORRHAGE

To the Editor of THE LANCET

SIR,—Dr. Tidy tells us that under modern methods many cases of severe gastric and duodenal hæmorrhage die and die quickly The question is, he remarks, whether or not the methods can be improved. May I submit that it would be interesting and perhaps very useful to invoke the aid of Dr Macfarlane's snake venom as a hæmostatic in these desperate cases I would suggest that the stomach should be washed out to remove the clots and the gastric secretion, and that a small quantity of snake venom—say, 1 in 10,000 in ice-cold water—should be introduced through the tube. In this way little gastric juice would be left in the stomach to interfere with the protein element of the venom, although the risk that the venom should lose its potency is probably small, since its rapid action is a distinctive characteristic

I am, Sir, yours faithfully,

GORDON RANSOME.

Mecklenberg-street, W C, Dec 19th

SERUM PROPHYLAXIS AND PUERPERAL SEPSIS

To the Editor of THE LANCET

SIR,—Dr Pulvertaft writes: "If I am wrong in thinking that 'early septicæmic deaths' are toxic, there is no valid basis whatever for my suggested prophylaxis" If, as I suppose, he regards these "early septicæmic deaths" as "toxic" because at post mortem there are no signs of extensive pyogenic invasion, he is profoundly wrong, and may well abandon his proposal for a prophylactic method which does not seek to prevent infection. A perusal of our many post-mortem records would show him at once that about 80 per cent of the deaths are associated with generalised peritonitis (a fact which was brought out by Lea in 1910), or with septic thrombophlebitis of large veins—both very gross evidences of progressive pyogenic infection The "early septicæmic death" which Dr Pulvertaft seems to have in mind is a very rare event in puerperal fever.

It may well be that a toxic product of some kind (perhaps produced by the streptococcus, perhaps by damaged tissues ?) is ultimately responsible for the *actual death* in all these cases, but I know of no evid[illegible]ever that this hypothetical toxic product is identical with the Dick toxin or the bination of toxins in Dr Pulvertaft's broth cult which kills rabbits within a few hours Let us fran admit our ignorance on this important matter one fact we do know—Dr Pulvertaft as well as is that the most characteristic effect of Dick to in the human body—viz, the scarlatiniform rash notoriously absent in the great majority of case puerperal fever.

Finally, will Dr Pulvertaft explain one poi Mrs A dies in three or four days of infection b hæmolytic streptococcus According to him she really died of poisoning by Dick toxin elaborated the streptococcus in her body An "irrelevan mouse injected with the same streptococcus dies 24 hours It is not susceptible to Dick toxin W killed it ? I am, Sir, yours faithfully,

LEONARD COLEBROOK

Queen Charlotte's Maternity Hospital, Hammersmith, W,
Dec. 24th

TRICHLORETHYLENE

To the Editor of THE LANCET

SIR,—My *attention has been directed to* following paragraph on page 2 of "Indu Maladies," by Sir Thomas Legge (Oxford Me Publications).—

> "Again the rapidity of absorption is important with some poisonous gases in sufficient amount, it quick as to cause instantaneous unconsciousness (c monoxide, sulphuretted hydrogen gas, trichlorethyle

I have had very considerable experience of the ef of chemicals and the measures of protection. well recognised that the effect of carbon mono and sulphuretted hydrogen of sufficient quanti dangerous because of the *rapidity* of the onset o symptoms of poisoning and in some cases su unconsciousness In the case of trichlorethy however, my experience of the effects of this subst are at variance with the above paragraph chlorethylene *is similar to other* chlorinated h carbons such as dichlorethylene, perchlorethy and chloroform in that it is *a* narcotic and similar to chloroform in that it does not pro sudden unconsciousness In these circumstances *classification of trichlorethylene with carbon mon* and sulphuretted hydrogen appears to me n accordance with fact

I am, Sir, yours faithfully,

THOMAS E A STOWELL, M D, F R C

Chief Medical Officer.

Imperial Chemical House, Millbank, Westminster, Dec

MATERNAL MORTALITY

To the Editor of THE LANCET

SIR,—In *reply to a deputation from the* Ma Mortality Committee, as you noted in your issue (p 1419), Sir Hilton Young indicated directions in which he considered an imp ment most desired That is to say, directions improvement in which would lead reduction in maternal mortality The first of Minister's recommendations is for an imp antenatal service The last four which cove provision of more trained midwives, more beds the service of consultants, may be summed meaning a maternity service scheme for the co Such a service, however, could do little to reducing mortality unless one vital factor is the most complete recognition That one fac skilled treatment at the time of the actual confine The provision of nurses, beds, and consultants c futtle avail after the damage has been done by skilled practical obstetrics Much discussion, both verbal and written has taken e during recent months concerning the first ommendation—antenatal care—and internal mor y In the wealth of opinion and information put ward the correct relationship between these two y distinct entities is in great danger of being orted or even entirely lost The two are discussed being interdependent to a degree of almost mathe tical proportions Such is far from being the case, l if this mistake is made no amount of effort will duce any appreciable reduction in our mortality ures If the discussion, money, and thought which e been devoted to antenatal care in its relation mortality during the last few years had been ended upon intranatal care we should be able to claim that definite progress had been made one will deny the benefits that result in efficient enatal care, but however efficient however skilled may be, it cannot to any great extent reduce the ternal mortality of this country Its abolition uld of course tend to a definite increase but the erse does not hold good That is perhaps a some hat provoking statement which demands justifi

we look at the figures given by the Departmental mittee as a result of its recent investigation it be seen that between 60 and 70 per cent of the ternal deaths are the result of actual childbirth not of conditions complicating pregnancy If these are added the deaths from abortion (a ature childbirth) our figures would be 70 to per cent Now the causes of death sepsis 40 per t (in primiparous patients over 50 per cent), morrhage 10 per cent , operative shock 10 per cent abortion, if included, 13 per cent I have given percentages to the nearest round figure, ignoring fractions It is quite impossible to maintain that enatal care can to any appreciable degree control e causative factors It may in fact does assist very general means in lessening the likelihood of e complications of childbirth It cannot, however, ent sepsis, operative shock or deaths from morrhage It may prevent abortion, but an ortion is no cause of death without some of the er factors added Even so, I am not suggesting t antenatal care is of no value It has however ceived more than its fair share of attention to the lusion of the far more important question of anatal care

If we take the remaining deaths amounting to ween 20 and 30 per cent we find the causative ctors are toxæmias 16 to 19 per cent embolism to 7 per cent , extra uterine 1 to 2 per cent It is kms that here is the main field of use for antenatal ke, particularly in those areas in which the incidence such causes as toxæmia is above the average se conditions are responsible for about 30 per cent the maternal deaths If to this is added a further per cent of deaths which might be prevented by ch means as the avoidance of the necessity for ergency measures by the timely diagnosis of ormalities, we have 40 per cent of the maternal aths as being controllable to some degree, however all, by antenatal care This is perhaps exaggerating anything the usefulness of antenatal care, but it sufficiently accurate to support the cause for its mainly Its abolition could cause a rise in maternal tality of anything up to 40 per cent But no ount of antenatal treatment will reduce the tality to zero nor even half its present percentage all, and unless, our knowledge is considerable advanced it can never avoid the occurrence of some of the most serious complications of childbirth It cannot prevent a placenta prævia, nor the introduction of sepsis through unskilled treatment of this condition, it cannot prevent the tragedy of the failed forceps with a half-dilated os, nor many other obstetrical tragedies which quickly come to mind

How then can the maternal mortality of this country be reduced? The answer lies in better treatment at the time of delivery, and it is from this point of view that the problem must be tackled Herein lies, too the answer to Mr Baldwin's message, quoted in your leading article of Nov 17th exhorting the British College of Obstetricians regarding "some factor which may have hitherto eluded our vigilance" I do not of course suggest that this factor has eluded the vigilance of the authorities, but it has certainly not been given the pride of place to which it belongs We have seen that at the lowest estimate 60-70 per cent of the deaths occur after and as a result of the actual delivery These deaths have been investigated and the causes ascertained I would suggest that a further investigation be undertaken to discover what kind of practice contributes the majority of these cases

It is, I believe, a fact that the mortality rate in patients looked after entirely by midwives is considerably below the average for the country The same is true also for cases attended antenatally and in confinement at maternity hospitals and maternity departments of general hospitals This leaves us with the practice of the obstetric specialist and with that of less skilled practitioners In this connexion, by obstetric specialist I do not imply only the so-called consulting obstetrician and gynæcologist, but anyone who by training, experience, and real desire to do this type of work is qualified to be called an obstetric specialist Now if it were possible to analyse the maternal deaths in this way, I am convinced that the large majority would be found in the practices of those without experience or time to do the work properly, those who from sheer necessity and force of circumstance have to go from childbirth to septic case and back again to childbirth often in surroundings which would daunt the most courageous if confronted with anything more serious than a spontaneous delivery, whose patients, generally undernourished and overworked are in the worst possible condition to withstand the demands of normal childbirth, much less the strain of necessary or unnecessary interference

If this suggestion is correct—and there can be little doubt—the answer to the question "How can maternal mortality be reduced?" lies in improvement beyond all measure in the standard of treatment given to the woman in labour, not instead of but in addition to the efforts that have been made in the direction of antenatal care But reverse the present system It is the specialist who should be taking after the actual confinement and the practitioner doing the antenatal care Such provision would certainly have to be the basis of any successful maternity service scheme until such time as there were sufficient obstetricians to undertake the entire work Put the state of childbirth on a higher plane let it be recognised as potentially a major surgical procedure—as indeed it is If other major surgical procedures were dealt with in surroundings [illegible] as held good for childbirth the results [illegible] would never be tolerated

This argument might be [illegible]

But how do you [illegible] midwives have such a low [illegible] is because they are not allowed to do anything. More than half the preventable deaths in childbirth are caused by unskilled and unnecessary interference. More than half the deaths in childbirth are preventable. If nothing more than vaginal examination were ever carried out by anyone not qualified by training, experience, and leaning to be called an obstetric specialist, we should halve the maternal mortality of this country. If no one but an obstetric specialist in its true sense ever dealt with pregnancy or parturition, the mortality would be still further reduced.

This may seem a mere visionary ideal; but is it? Once the principle is accepted that childbirth is a sufficiently serious problem to warrant specialised treatment, the rest would follow. A maternity service scheme for the country would surely eventuate. As was pointed out in your leading article, arrangements were made in 1931 for a grant to assist such a scheme; there are those now ready and willing to formulate and work out a practical proposition. Surely now is the time and in due course an adequate supply of real obstetricians would arise together with the necessary facilities to ensure that every woman in the country received satisfactory attention.

I am, Sir, yours faithfully,

F. NEON REYNOLDS.

Devonshire-place, W., Dec. 19th.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Comdr. A. B. Clark, M.B. to *President* for R N. College, Greenwich.

Surg. Lt -Comdr W. A Hopkins, M B., to *Victory* for R.N. Hospital, Haslar.

Surg -Lts. J. M McNamara and M J. Brosnan are promoted to rank of Surg. Lt -Comdr.

Surg. Lts. A. E. Flannery to *Harebell* and W. Greaves, M B, to *Victory* for Haslar Hospital.

Surg. Lt. (Short Service) W. A R. Thomson, M.D, resigns.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt. T G Evans promoted to Surg. Lt.-Comdr.

ROYAL ARMY MEDICAL CORPS

Brevet-Col. H. Marrian Perry, O.B E, hon. surgeon to the King, to be Col. and director and professor of pathology at the Royal Army Medical College, Millbank, in succession to Col. A C H. Gray, O.B.E., hon. surgeon to the King, who retires after 31 years' service in the Army.

Capt P N. Creagh to be Maj (temporary commission).

REGULAR ARMY RESERVE OF OFFICERS

Lt.-Col O C P. Cooke retires from the Res. of Off.

TERRITORIAL ARMY

Lt W Patrick to be Capt.

Supernumerary for service with O T.C—Norman John Logie (late Cadet, Glasgow High Sch Contgt, Jun. Div, O.T C) to be Lt. for duty with Med. Unit, Aberdeen Univ. Contgt., Sen Div, O T C.

ROYAL AIR FORCE

Squadron Leader H. McW. Daniel to Royal Air Force Depôt, Uxbridge, for duty as medical officer.

Squadron Leader Lewis Patrick McCullagh, M.B., retires

Flight Lts F. W P. Dixon, M.B E., to No. 101 (B) Squadron, Bicester; and J S. Carslaw to No. 5 (Army Coöperation) Squadron, Quetta, India.

Flying Offrs J C. Blair to No 2 Flying Training School, Digby, H. F. Harvey to No 3 Flying Training School, Grantham; and G H Morley to No. 5 Flying Training School, Sealand

Dental Branch—Flight Lt Ernest Sharp, L.D S, is

MEDICAL NEWS

University of Oxford

At recent examinations for the degrees of the following candidates were successful in [illegible] mentioned subjects :—

Pathology.—D. Ll Davies, H N. Davis, A. W. W. Gilford, J. R Hollick, M H. Hughes, D. W Loutit, N. J. de V. Mather, R. W. Parnell, A. H. M. R. Roaf, K. C. Royes, N. K. Stott, and J. Walter.

Medicine, Surgery, and Midwifery.—H. A. Clark, A. Fearnley, P. R. Greeves, C A. Hinds Howell, Hunt, T. G Lowden, R McDonald, R. Passmore, N. K. and T. M Williams

University of Cambridge

On Dec. 19th the following degrees were conferred

M.D.—J. St C. Elkington, J. H. L. E A. Nicoll, and L E. Houghton

M B, B Chir.—A. C de B. Helme, Arthur Lister, Willcox, C S. Hall-Smith, C. H. D Bartley, F. J. Curtis, Handley, and A. M. Lester.

M B—R. H. Dobbs (by proxy), W A Elliott, C. Bouldon, A. R. R Mears, and F. W. Holdsworth.

B Chir.—R W. D Turner and F. B Turner.

Royal College of Surgeons of England

At a meeting of the council on Dec. 13th licences dental surgery were granted to the following candidate

A. G. T. Allcorn, C M. Beales, E. G W. Bowerman, Brown, G. C Burton, T. E. Carr, F R. Chamberlain, Clark, H C. Davis, A. J. W Day, R. M De Lloyd, R. H. I Ll. Edmunds, C B G Elstob, A. E Everett, A. F. A I. Fidian, D. H. Fielder, K. E. J. Fletcher, H. C. Gertrude Hamburger, C. L R. Harris, H G. Harris, R. Hayton-Williams, R. L V Henderson, A. M. Horsnell, H. Jessop, G. M. Johnson, W. A. Jones, A. A. Joubert, Kendrick, S A. Leader, J. H. G. Morris, H M. A. G. J. Parfitt, J. D T. Pickering, S. H. Pollard, J. S. P. C A. Reynolds, K L Scott, A. G. Smith, J. W. E. P G Sparg, K. G Swiss, H C. A Weighell, I. O. L. W. N. Wycherley, and S M. Young.

The following hospitals were approved, with the specified, for recognition for the six months' su practice required of candidates for the final examination :—

London.—Dreadnought Hospital, Greenwich (2 surgeons); Hampstead General and North-West Lo (2 house surgeons), Prince of Wales Hospital, Totten (2 senior house surgeons); and Royal Northern Hosp Holloway (1 resident medical officer and 3 house surge

Provinces.—Royal United Hospital, Bath (first second house surgeons); Blackburn and East Lancas Royal Infirmary (1 resident surgical officer and 2 h surgeons); Royal Victoria and West Hants Hos Bournemouth (3 house surgeons); Royal Infirm Bolton, (1 resident surgical officer and 1 assistant resid surgical officer), Royal Devon and Exeter Hosp (2 house surgeons); Gloucestershire Royal Infirmary Eye Institution (1 resident surgical officer and 2 h surgeons); Huddersfield Royal Infirmary (1 resid surgical officer and 3 house surgeons); Hull Royal In mary (1 resident surgical officer and 3 house surgeo Leicester Royal Infirmary (4 house surgeons); Nor and Norwich Hospital (3 house surgeons); General H pital, Nottingham (4 house surgeons); South Devon East Cornwall Hospital, Plymouth (1 resident surg officer and 2 house surgeons); Royal Portsmouth H pital (1 resident surgical officer and 2 hous Preston and County of Lancaster Queen Victoria Infirmary (3 house surgeons), Royal Berkshire Hosp Reading (2 house surgeons); Salford Royal Hosp (1 resident surgical officer and 3 house surgeons); Worcester Royal Infirmary (2 house surgeons).

Royal College of Surgeons of Edinburgh

At a meeting of the College held on Dec. 18th, *Dr. A. H. H. Sinclair, president,* in the chair, the follow candidates having passed the requisite admitted to the fellowship :—

Charles Daniel Galbraith Williams, M.D. Toronto; John Mason, M.B Edin; George Connell Ferguson, Q.U. Ontario; Bernard Bruce Freshwater, M.B. Edin.; Gaffney, M.B. Edin.; Charles John Kenneth Hamilton, Camb.; James Alexander Imrie, M.B. Glasg.; James Irving, *M D. Toronto*, John Molineux Jackson, M.R.C.S. Owen Vaughan Jones, M.B. Liverp.; Ian Douglas M.B. Aberd.; Alexander Daniel Konkin, M.D. John Lowe, M.D. Edin; Charles Cowan McCallum,